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DR. BELLAMY OF PAPUA: I.¹

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Esse quam videre.²

It is difficult, even today, to work in the Trobriand Islands without soon encountering the name of Dr. Bellamy. It is said that his name has become a legend, and that some of the work attributed to him is legendary in nature. With this point in view it is highly desirable that a factual account of his work should be presented. It seems desirable, too, that the accomplishments of one of the pioneer public health workers in British New Guinea and Papua should be made generally known and placed in their proper perspective by an examination of the roots of the present-day health service of that Territory; for Bellamy was a pioneer, but the true value of his work in Papua was not appreciated in Australia. He was not ambitious or self-assertive: he was contented in his work. He retired and died without public recognition, but was respected and admired by those who knew him. It is hoped that this record of his life and work will draw more universal attention to his accomplishments, for he was one of the small band of men who have laid the foundations of public health in

what is now the Territory of Papua and New Guinea. The continuance of this same tradition of loyal and conscientious service and the probing into the origin of things would ensure the eminence of the health service of that country.

Bellamy, for a great part of his time, performed the dual role of doctor and magistrate. There are lessons, too, to be learned from his experiences in the administrative service. Nor do his accomplishments cease there, as he was regarded by Seligman as the authority to be consulted on the Northern Massim people in the earlier years of this century.

As a man he is still remembered with affection and respect by those who knew him. In spite of long years of residence and service in a small community in a tropical country, where tongues grow waspish, there was never a word of malice spoken of him, and this places him in the ranks of the very few.

Curriculum Vitæ.

Rayner Laming Bellamy was born at Stapenhill, Staffordshire, England, on June 23, 1874. His father, Robert Rayner Bellamy, was a surveyor, and his mother, who was forty-two years of age when he was born, had been Miss Charlotte Tinsley. Bellamy was the youngest of four children of this marriage, there being also Harold, Allen and Roberta, who was his favourite. His father had been married before, and there was a half-sister, Dorothy, from this marriage.

The family home, "Shellbrook Hall", was a large one in spacious grounds near Ashby de la Zouch in Leicestershire, and here Bellamy spent his childhood, probably attending

¹ A full bibliography has been lodged in the Mitchell Library, Sydney, and in the library of the School of Public Health and Tropical Medicine, Sydney.

² Motto used by the Bellamy family.

Ashby de la Zouch Grammar School, and learning to use gun and fishing rod. It has not been possible to determine whether Bellamy attended a public school; but in June, 1890, he passed the Entrance Examination in Arts of the Victoria University, Manchester. On his birthday in 1891 he received a letter from his ailing mother, who was then at "Stanleigh House", Donisthorpe, Ashby de la Zouch, praying to God to guard, guide and help him through his life, and enclosing five shillings to buy what he liked.

On October 21, 1891, he matriculated in the University of Cambridge, and, presumably after careful inquiry had been made with respect to his moral character, he was admitted as a non-collegiate student to that University, living in lodgings specially licensed for this type of student. On January 18, 1892, he commenced his medical studies. Later in the year, in September, his mother died at the age of sixty years from cancer. In October Bellamy was admitted as a pensioner—that is, a student paying his expenses—at Downing College, Cambridge. In this year he passed Part I and Part II of the first M.B., B.S. examination. In the following year, 1893, he passed Part I of the second examination in Michaelmas term, and in 1894 he received the degree of B.A., Cambridge. He had pursued a course of three years in the Natural Sciences Tripos, but on the results of his examination he received the ordinary B.A. degree.

Thus, at Cambridge, Bellamy received instruction in the basic medical sciences. Amongst his teachers was Professor Alexander Macalister, at the Anatomy School, and his tutor in biology at Downing College was Mr. J. H. Widdicombe, Fellow and Tutor of the college. It was not until 1897 that Bellamy proceeded to Edinburgh to continue his medical course, and it may have been during the years 1895–1896 that he acted as private tutor to Lees, the son of a wealthy family. In Edinburgh Bellamy lived, presumably in lodgings, at 10 Keir Street, Lauriston, which is not far from the Royal Infirmary.

In the summer vacation of 1899 Bellamy paid a visit to Iceland with two friends, Wilson and Lees, the latter being the lad whom he had tutored. During this trip he kept a diary, which has been preserved. The holiday was somewhat marred by high winds and heavy rains; but large salmon and trout were killed, despite smashed rods and frequent drenchings. Ducks, swans, cygnets, golden plover and snipe fell to the young men's guns. They dined unshaven and unkempt with Baron Böllow at Hertrellis. Amongst the simple record of daily events there are pencilled colour notes—passages of imaginative description of landscape, as when Bellamy records the feeling of loneliness of the Iceland countryside:

Valley after valley of huge [and] small boulders with intermediate nuclei of the same. The very silence was audible and I listened with my ear to the ground for a plover note and on firing it seemed as tho' a thousand echoes came back to me like bouncing indiarubber balls, echoing to and fro for some time between the boundaries of each valley, finally dying away into an indistinct boom a chaos of indistinguishable sound.

Passages such as this contrast with the record of day-to-day happenings, the careful and detailed lists of expenses incurred, and the results from gun and rod for each member of the party. The same note book also contains a few of the odd jottings of the medical student—fragments gleaned in the ward rounds of a hospital.

During the period from 1897 until about July, 1900, Bellamy attended lectures in the medical course at Edinburgh, acted as clerk and dresser in the wards of the Royal Infirmary, attended the Royal Maternity Hospital and the Simpson Maternity Hospital, managed six midwifery cases, and attended confinements in the district served by the Scotstown dispensary. In brief, he completed his medical training short of taking his final examination. Amongst his teachers at Edinburgh were Alexander Bruce (pathology), James Hodsdon and Peter H. MacLaren (surgery), D. Noel Paton (physiology), and A. R. Simpson (midwifery).

After the death of Bellamy's mother, his father moved to Skegness. He died in 1900, and Bellamy was left with sufficient money to be able to complete his medical course. However, he did not sit for his final examination in that year, and soon afterwards he was on the stage in the music halls, appearing with Miss Cissie Fitzgerald in a show called "Three of a Kind". This brief escapade ended when Bellamy became short of funds. He saw an advertisement stating that there was gold for the picking up in New Zealand and that the fare was £20. He said farewell to his sister Roberta, now married to the Reverend M. J. W. Morgan and living at Hazelbury Bryan, and booked his passage in the steerage.

On September 12, 1901, at 10.30 p.m. Bellamy sailed for New Zealand from Tilbury on the Royal Mail Steamer *Tongariro*, a ship of 7660 tons' burthen belonging to the New Zealand Shipping Company. He was then twenty-seven years old.

By the following year he had found employment at the coal mine at Blackball in the South Island. Blackball was a village some sixteen miles to the north-east of Greymouth, one of the main seaports on the west coast, and situated on the small estuary of the Grey River. In 1902 Blackball was an isolated place, being reached by a pack trail along the bank of the Grey River and finally a somewhat precarious crossing by boat or punt at Blackball. Bellamy bought a wooden slab humpy with a corrugated iron roof for £15 and lived in this with his dog. Across the way lived John Connolly in a similar dwelling place. Bellamy's dog saved his life on one occasion, when he jumped on his bed and barked and scratched until his master was roused, to find the hut on fire and full of smoke.

Blackball had been the site of gold diggings in the past; but at the beginning of the century, coal was being mined. Coal from the mine was conveyed by an aerial tramway to the railway at Ngahere, a distance of about three miles across the Grey River. Bellamy, now a member of the Blackball Miners' Union, was engaged in detaching the empty coal tubs when they returned to the mouth of the mine at Blackball. However, the monotony of the job palled, and he gave a week's notice of his intention of leaving. On being asked to reconsider his decision he replied: "Paint the tubs different colours; I can't stand those brown tubs coming at me day after day."

In his next venture Bellamy exploited his humour and talent for writing. He became the Blackball correspondent of *The Grey River Argus*, a morning newspaper published at Greymouth. This, on the surface, was a poor proposition, as the rival newspaper, *The Star*, also from Greymouth, had many more attractive features. The situation was reversed when Bellamy's "Blackball Notes" appeared. The notes were read and quoted for their humorous content over a wider field than the Grey Valley. Bellamy himself delivered copies of the *Argus* each day to the Blackball customers. He awaited the bundle of papers, coming by coach from Ngahere, in the shack of Mr. J. E. Dixon and his cousin, which was situated at the beginning of the paper delivery run. Here he would sit over a cup of tea, spinning yarns with these two.

In the columns of *The Grey River Argus* Bellamy described the current events at Blackball in much the same manner as present-day newspaper columnists, but possibly with more personal knowledge of the subject matter reported. Often he wrote in jesting mood, as in an account of the progress in the construction of the Ngahere-Blackball bridge. He stated (February 27, 1903) that he had heard that this project was a hive of industry, and had approached the scene with some trepidation lest the noise deafen him and his dog. He had found, however, a scene of prevailing gloom; a "somewhat swollen sewing machine" designed to work the pile driver was cold and inanimate. Rumour had played him false. The explanation was: "Waiting for timber—delayed arrival—unforeseen obstruction and difficulty in delivery. 'Twas the old story."

At other times he expressed serious indignation, as in a protest against the "gratuitous insults" thrown at the Blackball township by the Methodist Conference which, according to Bellamy, had said that the inhabitants of Blackball were "unregenerate miners preferring the attractions of hotel and billiard room to those of the church". In reply, Bellamy wrote (March 10, 1903):

We are unregenerate enough to earn our bread by the sweat of our brow and to pay our bills as we go. We—diggers and colliers—are unregenerate enough to send the hat round amongst ourselves when misfortune has touched a friend. A long time ago we are told that a certain Pharisee gave thanks that he was not as other men, and nineteen hundred years later the Methodist Conference smacks its delicate chest and says, "Thank God we are not like these unregenerate miners". Amongst us, a man is judged a "white man" or the reverse by his actions. May the day be far distant when we in Blackball fashion our charity of word thought and deed upon the model of these gentlemen who have seen fit from the flittering tower of their own piety to hurl at us the harmless firebrand of their contempt.

In his spare time in the mornings Bellamy worked, quite unsuccessfully, a gold claim, which had been given to him together with the necessary gear for sluicing. His comment upon the amount of gold won was that he was "not more than sixpence per week out of pocket for boot leather and candles". He also advertised in the *Argus* that he was prepared to coach pupils in mathematics and other subjects. Bellamy had a camera with him at Blackball and took a group photograph at the wedding

of Mr. Jack Nuttall, who still lives in that township. On festive occasions he wore his dress suit, which caused much amusement amongst the local inhabitants, and this in turn excited his own sense of fun. He often went shooting and fishing with his companions Smith and Skinner. On the occasion of the consecration of the Blackball cemetery he was chosen by the church people to meet the Bishop and escort him to the village.

Medical work occupied much of Bellamy's time at Blackball, where he was referred to as "Doc." or "Doctor" Bellamy, although he was quite open about the fact that he had not graduated. During the frequent absences of the local doctor, Dr. Millington, Bellamy's services were called upon with the consent and approval of this practitioner. The opinion has been expressed that this opportunity to practise medicine accounted for his willingness to stay in the isolated village of Blackball. That he was restless, however, is indicated by his suggestion that Dixon should travel with him to "Chile, Peru, anywhere".



FIGURE I.

Charlotte and Robert Rayner Bellamy, the parents of R. L. Bellamy.

In Greymouth, Bellamy met Mr. C. F. A. Broad, who was the manager of the local branch of the National Bank of New Zealand. Broad was a son-in-law of Dr. F. A. Monckton, of Feilding, in the North Island of New Zealand. Dr. Monckton was a colourful pioneer medical practitioner in the early days, and his son, C. A. W. Monckton, was at this time a resident magistrate in British New Guinea. Bellamy decided to go to that Territory and enter the Government Service with Monckton.

Farewell functions were held at Blackball and Greymouth, where presentations were made to Bellamy by his friends. Compliments were paid to him at both gatherings. It was stated that "since his arrival on the Coast, the manly part he has played, combined with his literary ability and charm of personal character, has won him many friends". At the large gathering in his honour at the Greymouth Club the president of the Club, Mr. Broad, presented Bellamy with a well-filled purse of sovereigns, and said that Bellamy's decision to go to New Guinea showed "the stamp of man he was". In reply, Bellamy "modestly and appropriately acknowledged the kind sentiments so ably expressed, and the valuable presentation made to him. He referred to the land of his destination as being chiefly noted for its export of dead missionaries and alligators, but granting good health, he had no doubt but what his going there would be for his ultimate good. He referred in feeling terms to the exceeding kindness he had been the recipient of during his two years' residence on the Coast". (*The Grey River Argus*.)

Bellamy left the Grey district with a letter to Mr. C. A. W. Monckton. On November 9, 1903, he was on board the steamship *Mapaurika* between Nelson and Wellington, when he wrote to his sister Roberta telling her of his movements. He was going to British New Guinea, and the farewells had been wonderful. New Guinea was somewhere on the equator. He believed that there was gold in the country, although the natives were awkward and the fever fairly bad, and he did not know how he would stand the tropics. His route would be via Sydney, Brisbane, Cooktown and Samarai, and he was going to see what it was like. He took with him from Greymouth a roving journalist's commission for *The Grey River Argus*, and his experiences for the

twelve months following his departure from New Zealand are recorded in a series of long articles in the columns of that newspaper.

From Auckland, in the North Island of New Zealand, Bellamy travelled to Sydney, New South Wales, in the steamship *Mararoa*. During his brief sojourn in Sydney he went to a cricket match, was pestered by cadgers whom he noted as resembling those seen on racecourses in England, and wondered how many people were killed each day by the trams. He proceeded northwards to Cooktown on a 4000-ton ship of the A.U.S.N. line, calling at Brisbane and Queensland ports. At Cairns he saw a hotel which was roped off from thirsty souls because of plague restrictions. Cooktown was hot, broken-down and bankrupt; he was pleased to be able to leave it within a few hours of arrival on an 80-ton vessel under sail for Samarai. It took six days to travel the 400 miles of this last stage of his journey. He had two fellow passengers who were on their way to work at the gold mines on Woodlark Island. The cargo consisted of rice and general stores, with a deckload of sheep and pigs.

On arrival at Samarai—a small island at the south-eastern tip of New Guinea and a centre of European population—the ship passed through a medical inspection. Bellamy went ashore and put up at one of the three hotels which were then in existence. In his own account of the voyage north, Bellamy made great fun of a tin of New Zealand cheese which had been entrusted to him for delivery to Monckton in New Guinea. The aroma of this cheese was considerably exalted in the tropics and evoked suspicious comment from health and other authorities.

At Samarai the main topics of conversation were trading, *bêche-de-mer* fishing and mining. Bellamy gathered much material for his newspaper articles and was informed that Monckton would soon be going south on leave. After two days he left Samarai, in a small steamer barely larger than a launch, for Cape Nelson on the mainland of New Guinea, where Monckton had his headquarters as Resident Magistrate of the Northern Division of British New Guinea. During the journey the Government ship *Merrie England* was sighted. Bellamy had some



FIGURE II.

Camping in Iceland in the summer of 1899.

apprehension lest Monckton was aboard on his way south, so that he would miss the man he had come some thousands of miles to see. However, the two vessels met, and although Monckton was on the *Merrie England* he was not proceeding on leave. He asked Bellamy to go on to Cape Nelson and await his return.

At Cape Nelson Bellamy stayed at the magistrate's residence with Mr. John Graham, a former Resident Magistrate in British New Guinea, who had worked a gold claim in partnership with Monckton on Woodlark Island, and later owned some pearl-fishing vessels. Monckton returned on December 26, 1903, and two days later he and Bellamy set off on a visit to the Yodda goldfield, travelling north to Buna Bay in the eight-ton Government cutter *Puli-uli*. At Buna Bay a party of native carriers was assembled for the march inland to the Yodda field. At the end of the first day's march Bellamy became aware of the early

symptoms of malaria and took a dose of quinine before retiring. He proceeded next day and those following over the difficult track to the Yodda, still suffering from malaria. On the field the 40 or so miners asked how much money he would want to remain permanently on the field to attend them. Bellamy pointed out that he was not fully qualified, but the miners replied that half a medical man was better than none. Bellamy quoted a figure, and the miners said they would write an answer within the month. He treated several people during this visit to the gold-field.

Conditions on the Yodda and Gira gold-fields were primitive. In the year 1903-1904 there were nine deaths amongst a population of about 100 miners on the two fields: one suicide, one accidental death, seven deaths due to malaria or endemic disease. On the other hand, the amount of gold won in that year, according to Monckton, was about 12,000 ounces, and the local value of gold was £3 15s. an ounce. The average miner's gross income was thus about £450 *per annum*. The cost of food was high because of the difficulty of transport, so that most of the mining on these fields did little more than pay for supplies. Many of those who made a surplus over expenses squandered it at Samarai before they could embark on a ship for the journey south.

On the way back to the coast Bellamy's malaria persisted, and he remained at Bogi station while Monckton visited the other fields. For a week he was treated by the Assistant Resident Magistrate, Elliott, but he had not fully recovered when he left Bogi and returned to the coast and then to Cape Nelson. Bellamy went on to Samarai, where he was treated by Dr. Taylor Hancock, the Government Medical Officer stationed on that island. He became very friendly with Hancock and gave anaesthetics for his operations. Bellamy recorded the diseases seen in the local native people and gave an account of beriberi in his contributions to *The Grey River Argus*. Hancock tried to persuade him to return home and complete his medical course. The two of them visited Kwato mission station, where Hancock gave lectures in first aid to the native pupils of the Reverend Charles Abel, of the London Missionary Society.

Early in 1904 there was word of a second gold strike at Cloudy Bay on the south coast of the mainland. Bellamy made the journey with a load of stores to Cloudy Bay, with the prospect of taking charge of a trading station and the likelihood of a gold rush in the area. He travelled uncomfortably on the *Bulldog*—of 18 tons and a 15 horsepower engine—with Mr. William Whitten, storekeeper, of Samarai. On reaching Cloudy Bay they had news that there was no gold, and this was confirmed by Whitten, who made a brief visit to the reputed gold-field. During Whitten's absence the Acting Administrator, Mr. C. Robinson, and a Government party arrived. Bellamy had already met His Excellency in Samarai, and on this occasion had an informal lunch with him on the muddy bank of the river. The Government party was also on its way to the Keveri Valley gold-field to settle claims of reward for its discovery.

Bellamy was disappointed at the failure of this new venture at its inception, but saw that there was no use in grumbling. The party returned to Samarai, leaving behind two undaunted miners from the Yodda field who had travelled with them. Bellamy paid another visit to Cloudy Bay in July, in the company of Mr. A. M. Campbell, Resident Magistrate of the Eastern Division. It was due to the efforts of Campbell in telegraphing the true state of affairs at Cloudy Bay to various mining centres in Queensland that a rush to that area was prevented. Arriving back in Samarai early in August, Bellamy found that Dr. Hancock was seriously ill with fever of a virulent type. Bellamy was asked to treat the patient, but despite all his efforts Hancock died on August 6. The death of Hancock was a great shock to his friends, and left the whole of the eastern part of the country without a qualified medical officer. It was about six weeks before Dr. Craigen arrived from Port Moresby, and during this time Bellamy attended to patients at the native hospital and acted as health officer at Samarai.

Some months later Bellamy wrote to Hancock's sister in Great Britain, giving her full details of her brother's end. It is probable that Bellamy was deeply moved by the death of Hancock, as he sent a cable to his sister telling her that he would soon be returning to England to complete his medical course.

During this period of eight months while he was looking around in the eastern part of Papua, Bellamy sent articles to *The Grey River Argus*. Not only did he relate his experiences, but he also covered a wide variety of subjects—a description of the Administration of the country, the life of a resident

magistrate, and the prospects for mining and the establishment of coconut plantations. He gave an account of the native people, their customs and diseases, and made comment upon the native labour situation. There were articles on the flora and fauna of the possession, the medical service, the mission stations and the European population engaged in commercial enterprise.

These accounts form a large and valuable contribution to the knowledge of British New Guinea in the early years of this century. They were published under a series of titles: "Grey-mouth to the Equator", "Black and White at Bay", "New Guinea Pessimist", "My Papuan Slave", "Travels in British New Guinea", and "British New Guinea". Much of the information contained in these articles was, of course, gathered from the local residents, but it has already been shown that Bellamy had travelled extensively in the Possession, and thus a great deal was based upon personal observation and inquiry. The humorous style of Bellamy's writing may not perhaps appeal to present-day readers of *The New Yorker*, but apparently it was very popular at that time. He evidently was able to support himself for a period of about nine months on the proceeds of his contributions as a roving journalist.

Part of one article is quoted here, as it shows Bellamy's interest and delight in colour and form and feeling for atmosphere, and also records the physical and mental condition of the European inhabitant of British New Guinea in the early years of the century—it is largely a self-portrait:

It never does to form too rapid an opinion about subtropical or tropical countries, because first impressions are not always maintained in the face of subsequent experiences. This is especially the case with British New Guinea, and personally I am conscious of a distinct change in my feelings towards this outlying possession in the Coral Sea. The traveller from a more healthful climate, possibly one with a tinge of sharp winter in its seasons, arrives say in Samarai. He is strong, full-blooded, enthusiastic and eager and anxious to explore the newness of things.

He shades his eyes and looks at the tall and graceful coco palms, loaded with their big, brown-cased nuts. He sees, perhaps for the first time, a luxuriant tropical vegetation. He is charmed and delighted with everything, the plumage of birds, bees and butterflies—the colouring of the crotons and other brilliant hued shrubs—the soft blue of the sea into whose depths he gazes down on the coral bed fathoms below. In this clearness of water he can trace strangely shaped and coloured fishes, swimming in and out of their coral castles. These and a thousand other sights and sounds combine to make new arrivals take a somewhat exaggerated view of everything. In fact he jumps at once to conclusions. The place looks a paradise and therefore must be one.

Now suppose our friend travels to and fro about his little paradise for several months, what a change we shall see when we meet him again. He has just come down from up country, we will suppose, country not yet opened up to the trade of the white man. He has had to contend with the ordinary difficulties of bush travelling added to a moist and depressing climate. One glance at his pale yellow skin and deep set eyes speaks to you of fever. The full bloodedness has given place to the pallor of anaemia and again you put a black mark against the naughty mosquito. The sun dancing on the ripples of the Coral Sea is now a "beastly glare". The palms and other shade giving trees which he thought so beautiful before, are now only useful to hang swarthy words on their branches. The coloured bird-plumage is now no better than that of the sparrow which chirps on the gables at home. All the energy, all the enthusiasm, all the spirit seem to have gone out of him, and the way he throws himself down on the deck chair on the verandah of his hotel indicates weariness which is perhaps as much mental as physical. You speak to him, some little casual remark or maybe a question he seems a long time answering and you wonder if he has heard. You remember that big doses of quinine produce a certain amount of deafness and you are therefore just about to repeat your remark in a somewhat louder tone when he replies, but you notice that he does not turn his head towards you. He has not even the energy or curiosity left to wonder who you are and so he remains staring out straight before him and you don't know whether his mental faculties are miles and miles away on some distant scene where you may not follow. Presently a native boy belonging to the hotel, in passing behind his chair happens to knock up against it. Immediately our friend is roused to a loud outburst of wrath quite out of proportion to the offence. Even his temper, too, then has undergone a change, and that change an undesirable one. There are several other yellow-visaged men lounging about the verandah, some leaning against the pillars which support the balcony above, and some in chairs. The outburst from our friend does not surprise them in the least. Each would have done the same. We are all more or less familiar with that type of individual so common in novels, ancient and modern, "the peppery colonel" who has returned home after twenty years' service in India. That type is not exaggerated; it is by no means necessary to be a colonel or indeed for that matter to hold any military rank in order to become "peppery". Anyone can become entitled to this adjective; all you have to do is to come out to a tropical country where the favourite flavouring condiments are bluestone, sulphuric acid and curry and in a very few weeks your temper will undergo such a change that you will fail to recognise yourself. Little petty annoyances which aforesaid would have passed unnoticed, now raise your anger to a high pitch, and things hardly worthy of comment become a source of the keenest worry. His paradise has vanished, all those hastily formed and early ideas of peace and contentment have vanished, leaving in their place a malarial liver and a splenic enlargement.

The Government ship *Merrie England* left Port Moresby in the early part of September, 1904, for the Northern Division, with the Administrator; Captain Barton, on board, together with Mr. H. L. Griffin, who was posted for duty in that Division. Dr. A. J. Craigen, the Chief Medical Officer, was a member of the party which called at Samarai on the *Merrie England*.

Bellamy was taken on board, and the ship sailed on September 11 for Cape Nelson. Bellamy, having thoroughly surveyed the field, had decided to join the Government Service for six months and then return to England. Barton had agreed with this arrangement. Bellamy had already noted for the benefit of his New Zealand readers that a man would make more money on shift work in Cobden quarry (Greymouth) than he could ever possibly hope to do in the junior branches of the Government service in Papua.

Monckton, the Resident Magistrate of the Northern Division, was taken on board at Cape Nelson, and the *Merrie England* then proceeded to Buna Bay—a newly established port. The old route to the gold-fields up the Mambare River to Bogi had been abandoned by this time because of navigational difficulties. At Buna Bay the party assembled a carrier line of about 150 natives to carry the stores and set off on the four days' march to Kokoda, the furthest inland Government station in British New Guinea at that time. Captain Barton accompanied the party

At the end of the six months Bellamy prepared to return to England and complete his medical training, as Hancock and then Griffin had urged him to do. He had obtained information on all the possible routes from Samarai to England, but pointed out in a letter that the route would largely depend upon the date of his arrival at Samarai. The first-class fare from Samarai to Sydney was £15, and from Sydney to England £40, second class. He was as ready to travel steerage as when he left England, but there were not many conveniences in the steerage should he become ill on the voyage home.

Bellamy resigned his commission, and his resignation was accepted regretfully by Barton, who, however, persuaded him to supervise work on the Buna road for a few months before he finally left for England. This contract was fulfilled with great credit, and then Barton offered Bellamy the position of officer in charge of a newly-built special hospital in the Trobriand Islands with the objective of eradicating venereal disease from these islands. Bellamy accepted this offer, and thus deferred his return to England and graduation in medicine for an indefinite period.

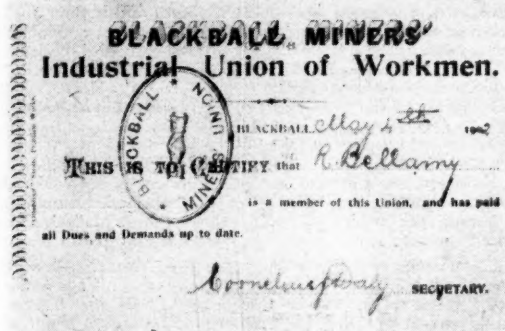


FIGURE III.

Bellamy's union ticket: Blackball Coal Miners' Union in the Greymouth area of New Zealand.

to Kokoda, which was about six miles from the Yodda goldfield. The Administrator held a meeting and addressed the miners, whom Griffin (1925) described as "a peculiar lot, the majority of them not by a very long way of the best class".

Having established Griffin as the senior Assistant Resident Magistrate in charge of Bellamy and an ex-miner named Elliott, Monckton went straightway on leave. Griffin had arrived in New Guinea three months before and had spent that period at Port Moresby. Griffin wrote of Bellamy as an ideal man to live with, a delightful companion, and always ready with very sound advice. He was absolutely imperturbable and never lost his temper, even when Griffin cut his hair with blunt nail scissors. However there was some reciprocal discomfort when it was Bellamy's turn to wield the nail scissors. When Griffin was absent on patrol Bellamy carried out the duties of magistrate and also cleared 30 acres of land for a garden, in which he planted various fruits and vegetables. He wrote to his sister that he could not take as much interest in the place as he should have done if he was going to remain permanently. Like many another New Guinea resident, Bellamy made a collection of butterflies while he was at Kokoda.

His work as Assistant Resident Magistrate is described in detail in a later section. It is sufficient here to note that Bellamy's work was considered to be outstanding by the Resident Magistrate, Monckton, by his fellow officers, and by the Administrator. He was in charge of any medical work that was necessary at Kokoda and was popular amongst the miners. His dealings with the native people were remarkable for the sympathetic understanding which he displayed. From Kokoda Bellamy wrote the last of his contributions to *The Grey River Argus* one year after he had left New Zealand.

He spent Christmas Eve of 1904 in camp on the Kumusi River, having tramped 70 miles through jungle in pursuit of a murderer. It was teeming with rain when he wrote to his sister, nostalgically recalling past Christmas Eves in his homeland, particularly at "Shellbrook". He hoped that he would be able to spend the next one toasting his toes in front of his sister's fire.



FIGURE IV.

Map of Papua and New Guinea, showing localities mentioned in the text.

He left Kokoda and the Northern Division with the good wishes and congratulations of his fellow officers, for the new position entailed a rise in salary from £250 to £350 per annum. The new rate would be equal to that paid to Monckton, who had been eight years in the Government service. Bellamy returned to Samarai, where Dr. R. Fleming Jones was now the Government Medical Officer; Jones had already had some experience with the venereal diseases in the area. In later years (letter dated May 18, 1914), Bellamy described Jones as a pleasant person and quite the cleverest man in his tropical work that the service had had for some time. It seems certain that Bellamy made his acquaintance at Samarai on the way to take up his new appointment. The Trobriand Islands are about 150 miles to the north of Samarai, and Bellamy made this journey on the steamship *President*, a small coastal steamer owned by W. Whitten, storekeeper, of Samarai. Bellamy arrived at Losuia, the site selected for the new Government station, on October 6, 1905.

Bellamy was the first resident government official in the Trobriand Islands, and his duties were magisterial as well as medical, amongst a homogeneous group of people whose numbers approached 10,000. In addition to the native people, there was a Wesleyan Mission station and a small commercial European population mainly engaged in the pearl trade. Here Bellamy worked for the next ten years, except for a period of six months when he had leave in Australia in 1909. This was the first time

he had left Papua since his arrival in 1903. During 1909 the authoress, Beatrice Grimshaw, visited the Trobriand Islands on the *Merrie England*. She recorded (1910) having tea at the Resident Magistrate's bungalow and hearing his opinion on the Trobriands and the Trobriand people. He supplied her with information on pearling, poisoning and endemic diseases. Miss Grimshaw did not mention Bellamy by name, but it is apparent that he was not on leave during her visit, since details of the information she published and even its phraseology appeared later in Bellamy's reports.

The details of Bellamy's work in the Trobriand Islands are presented in another section, but the main features may be described now. He had to fight against the malevolent power of the chiefs based on sorcery and fear, but by tact and perseverance, much of the native prejudice against European medicine was overcome. He introduced a method of case-finding of venereal infections, which later developed into what is now established as medical patrolling. His aim was to examine every native each year; the names of all the islanders were recorded, and his examinations became practically an annual census. Later, when he realized that the possibility of depopulation was an important item in the future economic development of Papua, he kept a register of all births and deaths in the group, and thus was able to quote the only factual birth and death rates in the Territory at that time.

As a result of Bellamy's work the incidence of venereal diseases fell considerably, owing both to his treatment and to his instruction of the native people in the method of transmission of these diseases. Mackay (1909), writing of his experiences with the Royal Commission on Papua, spoke of Bellamy as doing a great work in the Trobriand Islands in 1906. The Commissioner described him as one of the two most practically useful men in Papua at that time; the other was Dr. Jones.

The scope of Bellamy's work spread further than the one group of diseases he had been commissioned to treat. He made numerous observations on the epidemiology of such diseases as dysentery and malaria. He reported cases of leprosy, which disease had not been noted in the Territory since the early reports of Sir William MacGregor. He made the first attempt at the control of rural malaria in Papua.

In addition, Bellamy made a valuable contribution to the anthropological knowledge of the Northern Massim people and assisted Seligman in compiling the appropriate section of the classic, "Melanesians of British New Guinea". Further, his magisterial work was carried on at the same time, with its many activities. One of these, the planting of 120,694 coconuts, forms today a living memorial of his work. His relations with the Europeans were nearly always harmonious, and he eventually reached some understanding with Toulou, the paramount chief and prize sorcerer of the Trobriand Islands. The value of his medical and anthropological work was appreciated by the Lieutenant-Governor, Murray, and his accomplishments were noted in Murray's "Papua or British New Guinea", published in 1913.

For the first five years Bellamy lived in a picturesque, if creaky, house built of native materials, replaced later by an uninspired weatherboard and corrugated iron construction. His assistants comprised a detachment of two armed native constables, a skeleton boat's crew for his whaleboat, and one male and one female nursing orderly whom he trained himself. For much of his work he had to rely upon the village constables, whose value in the early months was doubtful, but who, under his influence, made it possible for Bellamy to carry out his large programme of work. He had apparently fully recovered from his earlier malaria, as Mackay (1909) remarked upon Bellamy's obvious good health during the visit of the Royal Commission to the Trobriands in 1906. Bellamy was "well set up and pink as a new chum just landed"; he was a "good advertisement for the climate". It may be noted that Mackay's visit was made in October, near the end of the dry season, when malaria is infrequent in the Trobriand Islands. The Commissioner added that he had been reluctant to leave Bellamy and his hospitable bungalow.

Bellamy's presence in the Trobriands was a comfort to missionaries' wives expecting babies; but when he later suffered from fever he was his own physician. On one occasion he broke an upper central incisor. There was no dentist in the Division, if, indeed, in the Territory. Bellamy stood in front of a mirror and removed the stump himself with forceps, so that the gum would be healed for the fitting of a denture if an itinerant dentist should come to Samarai or Port Moresby.

Apart from visits of inspection by his senior officers and by Dr. W. M. Strong, who accompanied Dr. A. Breinl of the Australian Institute of Tropical Medicine on a visit to the Trobriand Islands, Bellamy had little personal contact with other officers of the service during this period. The anthropologist Malinowski arrived on his first visit to the Trobriands a few months before Bellamy left for active service in the first World War.

Bellamy did not enlist immediately on the commencement of the war, although officers of the Papuan Administration were permitted to enlist and were granted leave for war service. He was very interested in the progress of the war and asked his sister to send illustrated papers. In the early months there was the somewhat remote chance that a hostile cruiser of the German Pacific fleet might arrive; but soon the only local effect of the war was a slight increase in the price of food. Bellamy's daily newspapers arrived once a month, and he also subscribed to *The Times* weekly edition. Often he was a month behind with the latest news of the war and letters were taking three months to come from England.

In April, 1915, he became restless; he thought there was some possibility of a German landing in England, and if that was so, it behoved all Englishmen overseas to return and defend their home country. He told his sister that he would soon be leaving for Sydney or London. In May he advised her to stop writing to the Trobriands as he would be leaving in July. He had heard of the sinking of the *Lusitania* and wondered what the reaction of the United States would be if any American lives had been lost. Malinowski suggested that Bellamy should be a joint author with him in a book on the sociology of the Trobriand people; but he considered the war and his participation in it to be much more important. Before Bellamy left the Trobriands his mandarin and orange trees, which he had planted as seeds and which had suffered severely in the drought of 1914, came to full fruiting.

On November 26, 1915, he volunteered in Australia for service in the Australian Imperial Force. Bellamy gave his age as being thirty-six years, whereas he was already well into his forty-second year at the date of attestation. His photograph as a private soldier shows that he would have had no difficulty in passing as thirty-six years of age. It is difficult to understand why Bellamy gave the younger age when forty-five years was the upper age limit acceptable for recruits in the first World War. He had wondered, before leaving the Trobriand Islands, if he would pass the medical examination.

Of his life as a private soldier in Australia, Bellamy wrote to Mr. W. H. Champion that he had a high degree of efficiency in clearing the camp area of waste paper by means of a sharpened iron bar, and that he was so well thought of that it was rumoured that he was to be promoted to peeling potatoes. Murray, the Lieutenant-Governor of Papua, is reported to have seen Bellamy engaged in this fatigue duty of picking up paper litter at Seymour camp in Victoria, and mentioned to Bellamy's commanding officer that it was a strange task for a man of Bellamy's qualifications. It may have been as a result of this that Bellamy was sent to do a short course at the officers' school at the Royal Military College, Duntroon. This course was probably one designed for non-commissioned officers, and Bellamy was not commissioned after it was finished.

In August, 1916, Bellamy was a sergeant of "D" Company, 38th Battalion (reinforcements) at Bendigo. The main body of the battalion had sailed for overseas service on the *Runic* in June of that year. On August 16, he embarked on the *Orontes*, but he had been unable to recover from Melbourne a small package of pearls which he had brought from the Trobriand Islands as a gift for his niece in England. He acted as ship's quartermaster for the voyage, which ended at Portsmouth at the beginning of October.

In England Bellamy first went to Codford, where he and his friend Sergeant S. Marquis were appointed as instructors. After the first week Bellamy suggested that they should drop their rank and join the 38th Battalion, which was soon leaving for France. The transfer was effected, and they joined the battalion, which was undergoing training at Larkhill on the Salisbury Plain. This camp was situated near the village of Amesbury, and was only 40 miles from Yetminster in the north-west of Dorset where Bellamy's sister, Roberta, lived at the vicarage. Leave from the camp was granted every Saturday and Sunday afternoon, and Bellamy made frequent visits to his sister and brother-in-law, the Reverend M. J. W. Morgan, canon of Salisbury Cathedral. Joining the group of people who had previously advised Bellamy to complete his medical course and qualify, Morgan was success-

ful in persuading him to apply for leave from the army for this purpose (Bastard, 1955) and used his influence to secure a favourable response to this application (Morgan, 1955). Morgan undertook to write to the University authorities at Cambridge for a certificate of the courses that Bellamy had completed at that University. Bellamy's old tutor, Widdicombe, was still at Downing College and remembered Bellamy well. In his reply to Morgan's letter he asked Bellamy to write to him (Widdicombe, 1916). Marquis (1955) stated that Bellamy himself made no move to apply for this leave.

The 38th Battalion was nearing the completion of its training for service on the western front. On November 18, 1916, Bellamy was promoted to the rank of corporal. Four days later the battalion embarked at Southampton, and it landed at Le Havre shortly after daylight next morning. Then followed a march to the rest camp and, next morning, a slow train journey lasting for

again in the trenches conducting raiding parties against the Germans, and some casualties were suffered by the unit.

Then came a "Blighty" for Bellamy in the form of six months' leave without pay, to date from January 23, 1917, for the completion of his medical studies. In the early months of 1917 the demand for recruits in the medical profession in the Australian Imperial Force reached its peak (Butler, 1943), and this probably had added weight to Morgan's efforts to secure special leave for Bellamy. By January 9 he was in London, and he spent at least a week in the south of England before going north to Edinburgh. During this time he drew £28 from his paybook account.



FIGURE V.
Captain R. L. Bellamy, A.A.M.C.

forty hours through the cold early winter to Bailleul. Here, for the first time, the men could hear the distant firing in the front line. From Bailleul they moved to Strezele, where a pleasant two days were spent amongst the friendly French people, with whom they drank coffee and wine while attempting to learn the French language.

On November 28 they marched the 20 kilometres to billets in Armentières, and three days later relieved New Zealand troops in the left sub-sector of the Houplines area. The march over the few miles to the front occupied an hour of floundering along narrow trenches through mud, which was waist-deep if a false step was made where the duck-boards were broken. The front line in this area was from 80 to 200 yards from the enemy, and living conditions in the mud were appalling (Fairey, 1920). The battalion held this subsector for ten days, with two hot meals per day and cocoa at midnight. On one day of this tour of duty gas was liberated against the enemy when the wind was favourable.

The 40th Battalion relieved the 38th, which then returned to Armentières where there were cafés, although they were within easy shelling distance of the front line, and there were fatigues—carrying ammunition and gas cylinders to the trenches. After six days the battalion returned to the trenches and then went into billets at Houplines, where Christmas Day was marked by a visit from the Corps Commander, Lieutenant-General Gadley, who expressed the soldier's constant hope to be home for the next Christmas. On December 31 Bellamy was promoted to the rank of sergeant, and on the following day the battalion was



FIGURE VI.
Dr. Rayner Laming Bellamy.

Bellamy had a perpetual ticket to the practice of the Edinburgh Royal Infirmary, although it was more than seventeen years since he had last used it. He employed a tutor and settled down to earnest study for the next three months. On April 16, having paid the fee of £30 three days before, he commenced the final examination for the Triple Qualification in the Faculty Hall in Glasgow. He was then nearly forty-three years of age. His attempt at the examination was successful, and he was awarded the qualifications L.R.C.P., L.R.C.S. (Edinburgh), L.R.F.P.S. (Glasgow).

At the end of his leave Bellamy, as a qualified medical practitioner, was transferred to the Australian Army Medical Corps and became a captain on June 29, 1917. He attended a course of instruction at the Southern Command Gas School at Porton for a week in August, and qualified as an instructor. Later in the same year he was posted to the Australian Army Medical Corps Training Depot, Number 2 Camp, at Parkhouse near Tidworth on the Salisbury Plain, as adjutant and officer in

charge of training. He remained with this unit until his return to Australia. At Parkhouse Bellamy was friendly with the medical officer of Number 3 Camp, the late Dr. G. F. Arnold, who, after his return to Australia, practised for many years at Windsor, New South Wales. A photograph in Butler's "History of the Australian Medical Services in the War of 1914-1918" (Volume 2, page 18) shows Major A. C. Fraser and Captain Bellamy on parade with the Training Depot. At Parkhouse Bellamy was well liked by the troops and respected for his previous service in an infantry unit. However, he was dissatisfied with the waiting for a posting overseas. He wrote to the Lieutenant-Governor of Papua describing his duties, and suggesting that he would be better employed in the Government Medical Service of that Territory. Murray secured his early release from the army (Bastard, 1955).

In April, 1918, Bellamy suffered from measles and was admitted to the military hospital at Tidworth. Shortly after his discharge from hospital he went to Weymouth, and he left England on May 12 for Australia aboard the *Ruahine*. During the voyage he was the ship's staff medical officer. On July 5 he disembarked at Sydney, and on July 23 his appointment in the Australian Imperial Force terminated at Melbourne.

Bellamy returned to Papua early in November, 1918. In the first few weeks after his return he was stationed at Port Moresby as Government Medical Officer. His professional status was now changed, as he had qualified in medicine, although he had held the appointment of Government Medical Officer in the Trobriand Islands before his enlistment. After a few weeks Dr. O'Reilly arrived in Port Moresby, and Bellamy was able to visit the Trobriands on special duty late in November. This special duty was, no doubt, to determine the state of affairs in the Trobriand Islands after his three years' absence. The officer who had been placed in charge was a stop-gap (Austen, 1955), and Bellamy found that venereal disease had increased considerably. Mr. E. Whitehouse was accordingly sent to the Trobriands and took over the medical and magisterial duties. Bellamy made another visit in February, 1919.

Dr. W. M. Strong, who was almost a year older than Bellamy, had arrived in British New Guinea a few months before Bellamy joined the Government service in 1904, but for many years had held magisterial appointments. Strong became Acting Chief Medical Officer in 1915 when the Chief Medical Officer, Buchanan, left Papua on leave on active service. In April, 1919, Strong proceeded on twelve months' leave, and Bellamy was appointed Acting Chief Medical Officer at Port Moresby during this period. In taking this position he also assumed the duties of Acting Chief Health Officer and Acting Chief Quarantine Officer. Bellamy showed that he was quite capable of carrying out these new duties and met the threat of pandemic influenza with appropriate measures.

Whilst in Port Moresby at this time Bellamy bought a house at Konedobu, which he rented to the employees of the wireless station which was situated in that area. He also took some interest in the affairs of the Returned Sailors and Soldiers' Imperial League.

Strong returned from leave early in May, 1920, and Bellamy was appointed Temporary Relieving Medical Officer. His first posting in this capacity was to Kikori in the Delta Division, where he relieved Dr. F. B. Leigh. Then he proceeded to the Trobriand Islands to relieve Mr. Whitehouse. While he was in the Trobriands Dr. S. M. Lambert, of the Rockefeller Foundation, visited the Group during his hookworm survey of Papua. Bellamy showed him the patients with venereal disease in the special hospital and assisted Lambert during his inspections and lectures in the villages. No hookworm treatments were given during this visit, as Lambert's assistant had been stricken with malaria and did not accompany him to the Trobriands. When Whitehouse returned from leave, Bellamy went to Port Moresby for a period and then himself went on leave on June 16, 1921. This leave was spent in Sydney, where he stayed at the Hotel Metropole.

On his return from leave Bellamy was appointed Travelling Medical Officer in the eastern part of Papua, spending much of his time in the Northern Division. The duty of the Travelling Medical Officers, of whom there were two at this time (Bellamy in the east and Leigh in the west), was to carry on a continuous medical patrol attending to medical and health matters in the villages. During his first year in this capacity Bellamy administered 4000 hookworm treatments as part of the Hookworm Campaign which had been initiated by Lambert. Bellamy

retained his interest in the behaviour and customs of the native peoples; some of his observations on group behaviour made at Raniau, in the Northern Division, were quoted by Williams, the Assistant Government Anthropologist. Strong was the Government Anthropologist as well as becoming the Chief Medical Officer at this time, upon the resignation of Dr. Buchanan, who did not return after the war.

In April, 1922, Bellamy proceeded on leave to Sydney, and there married Miss Laura Virginia Innocenti at St. Canice's Church, Darlinghurst. Bellamy had first met Miss Innocenti in Port Moresby, where she had gone to work with the British New Guinea Company in 1918. At the time of their marriage she was living in Sydney. It was typical of the man that on the night of their wedding he wrote to the Lieutenant-Governor of Papua informing him of his marriage.

Bellamy, as a Travelling Medical Officer, had no home to offer his bride in Papua, so he returned alone to a tour of duty in the Buna area in the Northern Division close to the scene of his first activities in British New Guinea. In 1923 he relieved Dr. W. E. Giblin at Samarai for six months, and his wife joined him there. She then accompanied him to Port Moresby, where he relieved Dr. Harse and acted as Chief Medical Officer during the absence of Dr. Strong. Bellamy's salary had by this time risen to £800 per annum.

In the early part of 1925 Bellamy commenced to make arrangements for a visit to England with his wife on his next leave. His passport, issued at Port Moresby in March, 1925, recorded Bellamy's height as being five feet ten inches, his eyes as blue, and his hair as fair. No special peculiarities were noted. Dr. and Mrs. Bellamy left Port Moresby and sailed from Sydney on April 9, 1925, via the Cape of Good Hope, reaching London in May. They lived in a flat in London in Bloomsbury Square. Bellamy joined the British Medical Association in October and maintained his membership in England until the end of 1932. In England he and his wife visited his relatives. They also travelled on the Continent, staying for a while in Paris and then visiting the south of France, San Remo and Italy, returning to London to join their ship for Australia. From Port Said they visited Cairo, and after calling at Colombo, reached Fremantle in December, 1925.

On reaching Sydney, Dr. and Mrs. Bellamy lived in a flat at Darlinghurst while he made arrangements to attend the second course in tropical medicine at the Australian Institute of Tropical Medicine at Townsville in northern Queensland. In Sydney also Bellamy pursued a prescribed preliminary course of laboratory instruction at a teaching hospital for one month—a necessary procedure to qualify for the examination in the Australian Diploma in Tropical Medicine at that time.

Although the Australian Institute of Tropical Medicine had been established in 1910, post-graduate courses in tropical medicine were not begun until October, 1925. At the end of the course an examination for a certificate was held, and, if the requisite preliminary course in laboratory instruction had been completed, an additional examination for the Australian Diploma in Tropical Medicine was necessary for the Diploma candidates.

In 1925 two Queensland doctors had obtained Certificates in Tropical Medicine. The course in 1926 lasted from May until August. There were three other students in addition to Bellamy, but one of these, Dr. A. A. Crooks of Victoria, withdrew because of an attack of dengue fever. Dr. W. L. Calov, of Rabaul, Mandated Territory of New Guinea, and Dr. C. M. Deland, of Vanikoro, British Solomon Islands, were Bellamy's fellow students, and all three passed the certificate examination. However, Bellamy was the only one with the preliminary qualification for the diploma examination, which he passed after thirty-nine hours of written and one and a half hours of oral examination. He was then aged fifty-two years, and gained the first Australian Diploma in Tropical Medicine. The Dean of the Faculty of Medicine at the University of Sydney, Professor D. A. Welsh, considered Bellamy's pass an excellent one, and he was also congratulated by the Senate of that University.

Amongst the teaching staff at this course at Townsville were Dr. A. H. Baldwin, the Acting Director of the Institute, Dr. G. A. M. Heydon, who had a few years previously demonstrated the vector of malaria at Rabaul, and Mr. F. H. Taylor, the entomologist. In private practice in Townsville was Dr. A. Breinl, whom Bellamy had met in the Trobriand Islands in 1912. They had corresponded on the subject of leprosy, and Bellamy had been interested in Breinl's work on the effect of tropical climate

upon Europeans. These two now renewed their acquaintance, and Bellamy often called at Breinl's home. During their stay at Townsville Dr. and Mrs. Bellamy lived in a flat on the Strand near the hospital.

When he had completed his course, Bellamy returned to Papua, and almost immediately (on August 24, 1926) left Port Moresby for the Trobriand Islands. Here he carried out an extensive campaign against yaws, and collected material for his report, "Enquiry into Vital Statistics of the Trobriand Group", which was issued at Port Moresby at the end of 1926.

In the following six years until his retirement Bellamy was Travelling Government Medical Officer in the eastern part of Papua. On some occasions his wife was able to accompany him, for example, in the Trobriand Islands—but on others she returned to Australia and awaited his return on leave. Of their twenty years of married life Mrs. Bellamy spent less than one half in Papua. Bellamy passed much of his time in the Northern Division, especially on the Kumusi River. In this area he became friendly with the Resident Magistrate, Mr. E. M. Bastard, at Buna. On his medical patrols Bellamy made it a rule to stay at Government rest houses and not to accept accommodation from missions or at plantations. He insisted that these rest houses should be kept in good order.

At one stage Bellamy considered transferring to the service of the Mandated Territory of New Guinea, as he was attracted by the higher salary. However, his wife pointed out that he would forfeit his Papuan pension and also that there were comparatively few years before he was due to retire; so he remained in the Papuan service.

After a final patrol, which aged him considerably, Bellamy retired on February 4, 1933, after more than twenty-eight years in the service of British New Guinea and Papua. He was then fifty-eight years old, and his pension amounted to £600 per annum. Bellamy and his wife went to live at Manly, Sydney, and at the end of 1934 he bought a house which looked out between pine trees over Sydney Harbour and through the Heads. The bush-covered hill of Dobroyd Point, where Bellamy and his wife often picnicked, was close by, and seagulls rested on the rocks exposed by the low tide on the foreshore. They had thought of going to the south of France, but the exchange rate was unfavourable.

Years before, Bellamy had commented on Murray's being created a Companion of the most Distinguished Order of Saint Michael and Saint George, and had jokingly suggested to his sister that when his own hair was grey and the authorities had begun to worry about how he should be honoured, he would be quite content with a small grouse moor or 2000 acres of rough shooting with a mile of salmon water. During his retirement he told an old friend from the Trobriands that he would have preferred Kaibola to Manly—that he would have been happy there with his shot gun.

In Sydney Bellamy was now able to indulge a passion for horse racing, which previously had necessarily been confined to his periods of leave. His betting was conducted according to a system of numbers which engaged his attention well into the night, but his wagers were rarely successful. He spent much of his time reading—often aloud to his wife in his pleasant medium-pitched voice—historical, travel and spiritualist books, medical journals, but not novels.

The local medical practitioners made use of Bellamy's specialized knowledge of tropical diseases, and he was called into consultation when, for example, cases of malaria occurred in people from tropical areas. On one occasion he was responsible for establishing the diagnosis of rat-bite fever. He accepted no fee for these consultations.

Bellamy developed an interest in spiritualism and attended meetings of a "circle" in Manly. He discussed psychic phenomena with Mr. J. T. Bensted, who considered that this interest was not of a religious nature. At one of these meetings the "voice" called for Dr. Bellamy, and said that it saw him with his dog outside his shack at Blackball. This greatly impressed Bellamy. Perhaps he was impressed even more when, on the next occasion, the "voice" spoke about Bellamy's being on some steps carrying a woman, for he stopped going to the meetings from that time.

In 1935 his sister Roberta died, and thus ended a friendship which had lasted through his years in Papua; she had been his link with home and family.

Bellamy played the piano well and was a fluent and entertaining speaker. Of great interest to him were the weekly meetings of retired officers of the Papuan service held on Friday mornings in the city of Sydney. Here he had coffee and talked with the friends and acquaintances of his Papuan days. In 1933 Dr. Strong accompanied twelve Papuan students who came to Sydney for instruction at the School of Public Health and Tropical Medicine. These students lived at the Quarantine Station near Manly, and Strong, who visited them at the week-end, frequently called to see Bellamy in Manly.

In the last few years Bellamy suspected that he was suffering from some heart ailment. Although he did not confide in his wife, she noticed that he avoided hills when they were out walking. On one occasion he mentioned his suspicion to Bensted, who, just before Bellamy's death, saw him running to catch a tram for Circular Quay after one of the weekly meetings.

Bellamy died in his garden on April 16, 1938, at the age of sixty-three years. He had been digging a drain. His wife, who had turned away, heard something fall. When she reached him he was breathing his last. His death was noted by Sir Hubert Murray (1938) in his annual report, where he did not wish to express his feelings about a personal friend; Bellamy was sincerely regretted by his many friends and, as far as Murray knew, he had no enemies. Murray had called upon Bellamy's sister during a visit to England.

In addition to these remarks of Sir Hubert Murray and the assessments of Bellamy mentioned elsewhere in this account, many comments have been made about Bellamy in letters received by the writer from people who knew him. These various comments paint the picture of a man of charming personality who was universally liked by his fellow officers of the Government service, by members of the public, and by the native people of Papua. Of cheerful disposition and with a boyish sense of fun he always had some amusing tale to relate. Although he usually avoided talking "shop", he would discuss places of common interest over a few drinks. He has been remembered well by some for over fifty years. He has been described by one as "indeed an English gentleman" and by another as "one of the finest men I have met or known". His tenacity of purpose has been recalled, too. Others remember him gratefully as the doctor who succoured them in illness, and female comment has included mention of his wholly charming personality and his wonderful bedside manner. His company officer considered him to be above the usual run in education and intellect when he was a non-commissioned officer in an infantry unit. As an officer he was always immaculately dressed, most efficient and likeable, and respected by other ranks. Other qualities become manifest in the record of his achievements.

From his widow it is learnt that he drank but little; he was honest and straightforward; he was hopeless as a poker player. Every item of expenditure was recorded in his note book and a tally was made at the end of the year. From no source has there been any suggestion of hostility, even though his honesty and insistence that matters should be *comme il faut* led to temporary irritation at the time.

He was a sportsman keen on shooting and fishing, both in his youth and later in Papua. In domestic and business matters he allowed his wife to make the decisions. Bellamy was never rich in the monetary sense. While in the Trobriands he invested money in copper shares, which he lamented had dropped to zero in 1910. He advised his brother-in-law not to put money into any Papuan schemes, and kept him posted on the progress of the search for oil in Papua. He invested his early savings in Kula-medau gold mine on Woodlark Island, but the eventual result was financial loss to him. After this venture he was usually content to save money and invest it in more conservative securities, apart from his budgeted expenditure on horse racing; but gold continued to attract him. He welcomed the pension scheme when it was proposed in 1914.

Bellamy had two nicknames: to some he was "Peter", and to his sister he was "Billy". He considered the christian names given him to be rather cumbersome.

Bellamy's work in British New Guinea and Papua will be described in subsequent papers under three main headings covering the fields of public health, anthropology, and government administration.

MATERNAL AND FETAL PROGNOSIS IN TOXÆMIAS OF PREGNANCY.¹

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I THANK you for the honour you have done me in asking me to address you. I think I need offer no excuse for my choice of subject. Toxæmia is now the most frequent cause of maternal death in child-birth. It is the most common cause of premature birth and of intrauterine death of the fetus.

It is customary to divide toxæmias of pregnancy into three classes—namely, preeclamptic toxæmia, chronic hypertension in pregnancy, and chronic glomerular nephritis in pregnancy.

Preeclamptic Toxæmia.

Preeclamptic toxæmia represents about 70% of all toxæmias of pregnancy. The patient is well, with no signs of toxæmia, before the end of the twentieth week of pregnancy counted from the first day of the last menstrual period. The signs become apparent for the first time after that date, and often not till after the thirtieth week or even later.

Chronic Hypertension in Pregnancy.

Chronic hypertension accounts for about 25% of toxæmias of pregnancy. The patient has raised blood pressure before the end of the twentieth week, and may be known to have chronic hypertension before pregnancy starts—often the relic of a preeclamptic toxæmia or eclampsia in her first pregnancy. For many years I have taken 120/80 millimetres of mercury as the upper limit of normal blood pressure, and I am glad to know that Professor Bruce Mayes of Sydney uses the same standard. The standard "over 140/90", popular with physicians who are not responsible for the life of a fetus, is in my opinion too high, as a diastolic pressure of 90 millimetres of mercury approximates too closely to the possibly lethal level of 100 millimetres, diastolic, which in preeclamptic toxæmia may kill the fetus from anoxia. In many clinics it is customary, if the first blood pressure reading is high, to rest the patient and take it again after half an hour or so, and to record only that result if it is lower than the first reading. I believe that this is wrong, for the blood pressure of a normal person does not rise to an abnormal level with mild exertion or nervousness. If it does so, the patient is a potential or actual hypertensive. These remarks apply also, of course, to the early diagnosis of preeclamptic toxæmia.

Chronic Glomerular Nephritis in Pregnancy.

Chronic glomerular nephritis is rare in association with pregnancy; it occurs in not more than 5% of all toxæmias, and probably in less than one in 1000 deliveries. The diagnosis is often difficult, and the management and prognosis present special problems which, in view of its rarity, we shall not consider here.

It will be clear that these three varieties of toxæmia, all quite different in their response to pregnancy and in their prognosis, can be differentiated from each other only if the patient has come under observation before the end of the twentieth week. If she is examined for the first time after that, the toxæmia is "unclassifiable", unless she has been known to be a chronic hypertensive or to have had chronic glomerular nephritis before the pregnancy began.

Eclampsia.

Eclampsia may be a sequel of any of these three forms of toxæmia, but is particularly apt to occur in chronic hypertension. As far as we know at present, the immediate causes of fits are two:

1. Marked and sudden rise of blood pressure—the so-called "hypertensive encephalopathy". F. B. Byrom (1954), in his work on experimental hypertension in rats, in which he removed one kidney and clamped the renal artery of the other, found that the blood pressure rose to a very high level in a few weeks, and finally the animal got convulsions and coma, death following quickly unless the clamp was removed. By an ingenious technique he demonstrated spasm in the small arteries of the cerebral cortex (as well as elsewhere throughout the body).

2. Edema of the brain—the so-called "wet brain". This, I believe, is the other cause of fits. This may act by increasing intracranial pressure. Rowntree's work on water intoxication supports this view. He showed that he could, by giving 50 cubic centimetres of water per kilogram of body weight to a dog every half hour, produce convulsions, coma and death in a few hours. There was an increase of weight of 20% to 30%. The only post-mortem change was edema of the connective tissues, liver, kidneys and brain. Rowntree was able to demonstrate increased intracranial pressure and believed this to be the cause of the fits. The blood pressure did not rise unless vasopressin was given at the same time (Weir, Larson and Rowntree, 1922).

Possibly there is a third factor present that predisposes to convulsions—namely, "cerebral dysrhythmia"; but its importance has not been finally proved.

It is probable that 1 and 2 supplement each other in causing fits, so that they can occur if there is a very sudden and high rise of blood pressure even if there is little edema, or if there is much cerebral edema and the blood pressure is relatively low.

If these views regarding the causes of eclampsia are correct, it follows that prevention of eclampsia depends on the early diagnosis and treatment of raised blood pressure and edema, while the treatment of established eclampsia depends on controlling these two.

Prognosis in Eclampsia.

From examination of 29 annual reports of British, including Australian, hospitals for the years 1949 to 1953, I find that in 207 cases the maternal mortality rate was 3.3% and the perinatal mortality rate 20.7%. This, in my opinion, can no longer be regarded as satisfactory. From Cincinnati, United States of America, 205 consecutive cases have been reported with three deaths, two of which occurred in preantibiotic days from sepsis, one fourteen days and the other sixty-five days after delivery. This is a maternal mortality rate of 1.5%. Treatment is based on the assumption that the fits are due to cerebral vascular spasm, and that if it can be relieved they will cease. This is achieved by administration of veratrine or other alkaloids of *veratrum viride*. These workers also treat the edema by the intravenous injection of dextrose as a diuretic, and inject 50% magnesium sulphate solution intramuscularly as a sedative and anticonvulsant. No other sedatives are given. (Bryant and Fleming, 1940; Garber, 1950; Garber, 1953).

Preeclamptic Toxæmia.

Prognosis in preeclamptic toxæmia depends mainly on early diagnosis; this involves regular weighing (useless unless care is taken to weigh the patient in the same clothing and on a machine whose accuracy is checked at least every week) and blood pressure estimations (the diastolic pressure taken when the sound ceases). Great emphasis is sometimes laid on a diet of low carbohydrate content and low caloric value to keep the weight down so that the patient does not gain more than three-quarters of a pound per week. I have never been convinced of the value of this, except in so far as the weight control is due to sodium restriction to prevent edema. It is true that there is some, though not conclusive, evidence that obesity can by itself cause hypertension (Pickering, 1955). In passing, it may be noted that Byrom found that if his rats were given salt and water instead of tap water to drink, their blood pressure rose more quickly and to a higher level. It may be that salt in some way sensitizes the musculature of the arteries. In any case, it is important

¹ An address to the Tasmanian Branch of the Royal College of Obstetricians and Gynaecologists, March 23, 1957.

that any abnormal weight increase or rise of blood pressure should be a warning signal for more frequent examinations, and in most cases the patient should be examined again within one week.

Fœtal Prognosis.

I believe that in preeclamptic toxæmia, the prognosis for the fœtus depends on two factors—(i) the level of blood pressure, (ii) the size of the placenta.

Level of Blood Pressure.—If the systolic pressure exceeds 160 millimetres of mercury, there is apt to be dangerous spasm in the decidual arteries supplying the placenta. This causes anoxia in the walls of their terminal capillaries, with the result that when in a short time the spasm passes off and blood flows again, they rupture, and bleeding occurs behind the placenta—retroplacental hæmorrhage; this, if extensive, will kill the fœtus; or it may be a small and localized hæmorrhage, forming the well-known "red infarct" described by Young (1914), in which case the fœtus may survive for the time being. It will be observed that these events are similar to the vascular changes that cause menstruation, so well described by Markee in 1940.

At the same time as spasm occurs in the spiral arteries of the decidua, it also occurs in the afferent arterioles of the renal glomeruli. There it causes anoxic injury of the glomerular capillaries; when the spasm relaxes and blood flows again through the capillaries, protein leaks through the injured capillary wall into the tubules, causing albuminuria. Albuminuria is therefore a bad prognostic sign in so far as the life of the fœtus is concerned, for it indicates that the systolic blood pressure has exceeded 160 millimetres of mercury, and may do so again and possibly cause retroplacental hæmorrhage in the very vascular placental area. In some cases the spasm in the afferent arteries of the glomeruli lasts still longer, and then it may cause renal cortical necrosis of varying degrees of severity and extent (Sheehan and Moore, 1950).

The diastolic pressure is also important in fœtal prognosis. If it is raised, this indicates peripheral arteriolar constriction, continuous in this case, which, occurring in the arteries conveying blood to the maternal placental sinuses, may reduce the blood supply to these sinuses to such an extent as to endanger fœtal life by anoxia. It has been shown by using radioactive sodium that the maternal blood flow in the placenta in preeclamptic toxæmia and chronic hypertension is reduced to about 50% of normal (McClure Browne and Veall, 1953).

To judge from clinical experience, it would seem that the danger level of diastolic pressure is about 100 millimetres of mercury. It will be evident therefore: (i) that albuminuria is not serious in itself, but only as it indicates that the systolic blood pressure has exceeded the danger level of 160 millimetres of mercury and may do so again; (ii) that it is always a late sign of preeclamptic toxæmia; (iii) that if the fœtus is to survive, the mother's blood pressure must be kept below 160/100 millimetres of mercury. The methods of doing this are well known. Reassurance is important, for anxiety can itself maintain high blood pressure in these women, and mental relaxation can lower it. Other well-known measures are bed rest, the use of sedatives and salt restriction. Fortunately, these are generally sufficient; the blood pressure falls to a safe level (though albuminuria may persist till long after delivery, as it is due to injured capillaries which may take many months to heal), the pregnancy goes to term, and a living, healthy child is born. I believe that if these patients are admitted to hospital for treatment they should stay in till delivered. I have seen disasters, including fœtal death and even eclampsia, follow neglect of this rule.

The Size of the Placenta.—It has been alleged that the placenta in toxæmia is smaller than normal. However, there is no evidence of this. I have examined the weights and weight ratios (fœtal weight divided by placental weight) of a series of normal and toxæmia placentas at term. The results were as follows. Of 200 normal placentas at term, the mean weight was one pound six ounces; of 100 toxæmia placentas it was one pound nine ounces; of 56 chronic hypertension placentas at term, the

mean weight was one pound five ounces. It is, of course, well known that abnormal placental infarction may occur in toxæmia; but this should be preventable by treatment, including if necessary the use of hypotensive drugs.

The weight of the normal placenta varies much—in my experience it varies at term from one-quarter to one-fifteenth of the fœtal body weight, the average being about one-sixth. What determines the size of a healthy placenta is not known; it is not even known whether the placental weight ratio tends to be more or less constant in the same woman in successive pregnancies, in which case it may or may not be evidence of a Mendelian character. However, there is no doubt that if the placenta happens to be small, even though it is not otherwise abnormal, it has less functional reserve, and the chances of the patient's having a living child are, other things being equal, reduced. However, there is always the hope that in her next pregnancy the baby will be endowed with a larger placenta.

The perinatal mortality rate in 314 cases of preeclamptic toxæmia treated at University College Hospital, London, from 1949 to 1952, was 5.7%. These were cases severe enough to make indoor ante-natal treatment necessary. As the perinatal mortality rate depends on the standard of toxæmia adopted, it is a truer indication of the rate if it is expressed as a percentage of all deliveries. I have worked this out from the annual reports mentioned above. Lumping all forms of toxæmia together, for they are differentiated in only two reports, I found that it varied from 0.4% to 1.5%, the average being 1% of all births. It will interest you to know that the lowest rate of all, 0.4% in 1200 births, was at the Royal Hobart Hospital in 1955.

Fœtal Prognosis in Chronic Hypertension.

The fœtal prognosis in chronic hypertension is often surprisingly good. It seems that in long-standing hypertension the circulatory system has become adjusted, so that in spite of a high diastolic pressure the heart can maintain sufficient maternal placental circulation to keep the fœtus alive, and even ensure its normal growth. We have all seen patients with sky-high chronic hypertension, but normal kidney function, go through pregnancy without trouble and produce a large, healthy child at term. In passing, I may say that it is seldom or never necessary to perform therapeutic abortion in such cases no matter how high the blood pressure is, provided that there is no evidence of kidney damage. There is a certain risk, variously estimated at 20% to 50%, that superimposed preeclamptic toxæmia will develop, especially after mid-pregnancy, and this undoubtedly increases the risk to both mother and child. Unfortunately, it is not at present possible to say which patient will develop preeclamptic toxæmia and which will not.

Among 151 cases of chronic hypertension in pregnancy treated at University College Hospital, London, from 1949 to 1952, the perinatal mortality was 8%. Taylor, Tillman and Blanchard (1954) in 372 cases had a fœtal mortality rate of 15.7%.

Remote Prognosis in Preeclamptic Toxæmia.

About 20% to 50% of women, according to the standard of normal blood pressure adopted, who during their first pregnancy had preeclamptic toxæmia, are left with chronic hypertension after delivery. Sheumack and I have been investigating this at the Royal Hospital for Women, Sydney, during the last four years (Browne and Sheumack, 1956). We concluded that whether or not the patient will develop chronic hypertension depends on her family background. If there is no familial hypertensive background, she will not become a chronic hypertensive. If, on the other hand, she comes of a hypertensive family, the chance of her becoming hypertensive is quite large, as is the chance that she herself will be found to be a chronic hypertensive immediately after delivery. It seems that the preeclamptic toxæmia from which she suffered during her pregnancy does not actually cause the hypertension, which would have developed even if she had not become pregnant, but has made it appear earlier than it would otherwise have done. In other words, the toxæmia has exposed a

latent hypertensive tendency and changed a potential into an actual chronic hypertensive.

There is some statistical evidence for the view that whether or not this will happen depends to a large extent on the length of time during which the hypertension has lasted before delivery, and on its severity, and that premature termination of the pregnancy is therefore advisable as soon as the fetus is viable, in order to prevent it. As, however, these patients are prone ultimately to become chronic hypertensives in any case, it hardly seems worth while to interfere for this reason alone. Certainly termination of pregnancy before viability of the fetus for this reason is not justified.

Hypotensive Drugs in Toxæmia.

In some cases the simple measures mentioned earlier fail to control the blood pressure and to keep it at a safe level. If the pregnancy has already reached the end of the thirty-seventh week, this does not matter much, as the pregnancy can be terminated and the baby saved. It is quite a different matter if it has reached only the thirty-second or thirty-third week, for termination of pregnancy then will too often produce an infant that is too premature to survive. Here it should be emphasized that the baby has not a reasonable chance of survival till the end of the thirty-seventh week. This should be estimated very carefully by counting the number of days elapsed from the first day of the last menstrual period and dividing the result by seven to get the number of weeks. The abdominal girth is a most valuable check, for after the thirty-second week the largest girth should be approximately the same in inches as the number of weeks. If, for instance, the girth at "term" is only 36 inches, it should make one doubt whether the pregnancy has reached more than thirty-six weeks.

When the blood pressure is uncontrolled and less than thirty-seven complete weeks have elapsed since the first day of the last menstrual period, hypotensive drugs should have a useful place in enabling us to carry the pregnancy on. However, as far as I know, no results have so far been published that claim a reduction of perinatal mortality in a reasonably large series of cases. Possibly some part of this failure is due to the fact that ganglion-blocking preparations have been used. These agents are unsuitable for use in pregnancy, as they dilate the veins as well as the arteries, cause pooling of blood in the lower extremities, and so reduce cardiac output and therefore the blood supply to the placenta. With this exception, hypotensive drugs may be used in the same way as in non-pregnant patients; but sudden extreme drops of blood pressure must be avoided, as they may kill the fetus. In order to assess their value, their administration should not be started till the usual simple measures have been tried for at least four days. The aim should be to reduce systolic and diastolic blood pressures to a safe level and keep them there. I doubt whether these drugs should be used for chronic hypertensive patients unless there is superimposed preeclamptic toxæmia. Their use as a preventive of preeclamptic toxæmia in these cases has been suggested, but I do not know of any actual trial. Possibly the oral administration of reserpine, a mild and slowly acting drug, may have a place here.

Conclusion.

The cause of eclampsia continues to elude us; but we have travelled far from the days of *accouchement forcé*, when delivery was forced as soon as fits started. The maternal mortality rate was 20%, and little or no regard was paid to the welfare of the child. The appalling loss of young life in two great wars has made us conscious of the need to save the child when we can. The expectant treatment of eclampsia, introduced and described in detail by Hastings Tweedy of Dublin in 1896, and often wrongly attributed to Stroganoff, was an epoch-making advance, and immediately vastly improved the prognosis for mother and child. Since then there has been a steady advance all along the line. Routine ante-natal care is now making a great contribution. In this Australia has been in the forefront, for the first ante-natal clinic in the world was started

in Adelaide in 1910 by Dr. T. G. (now Sir George) Wilson, and the third in the world at the Royal Hospital for Women, Sydney, by Professor J. C. Windeyer in 1912. The remarkable achievement in preventing eclampsia at the Women's Hospital, Crown Street, Sydney, has received world-wide recognition, and has shown what good ante-natal care can accomplish. It is disturbing to reflect that this example has not always been followed, and that there are some clinics in which the incidence of eclampsia in booked cases is still as great as in the days before routine ante-natal care was introduced—namely, one in 400 or one in 500.

It is only by a concerted effort, in which nothing but the best is good enough, that eclampsia and pregnancy toxæmia will cease to be the chief cause of maternal and fetal death and of premature birth.

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THE PROBLEMS OF THE INGUINAL HERNIA.¹

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INGUINAL HERNIA is a term used to cover a number of various and distinct herniæ occurring in the inguinal region. It is convenient in many ways, as it serves to indicate the affected area, and to show that the sufferer has a bulge or protrusion at this site. Thus the patient is reassured that he has a rupture, the insurer through his claims staff has an understandable concept of the nature of the complaint, and (if the condition is compensable) is in a position to make his estimates of the financial pain entailed; lastly, the attendant medical practitioner is spared the necessity of making an accurate diagnosis of the exact lesion in the affected area, at times extremely difficult prior to operation, even to the most experienced. From the point of view of surgery, however, such variations are of far more than passing academic interest. Aetiology varies, and the surgical procedures required for a satisfactory repair are dictated by the anatomical aberrations giving rise to the particular hernia. No one operation,

¹Read at a meeting of the Section of Surgery of the New South Wales Branch of the British Medical Association on August 16, 1956.

either in theory or in practice, covers the requirements necessary to repair such pronounced variations in the type of hernia and anatomical abnormalities. It is well, therefore, from a surgical point of view to have as much information prior to operation as it is possible to obtain by careful attention to the history, by the appearance of the swelling, and by a detailed examination of the inguinal canal, so that one may be forewarned of the possible difficulties ahead and of the probable type of operation upon which one is to embark.

Inguinal Canal.

A clear concept of the inguinal canal is obligatory for the herniotomist, for on this are based the surgical procedures aimed at the restoration of the normal anatomy of the canal and the coincidental cure of the existing hernia.

The canal lies between the internal ring at a point just lateral to the deep inferior epigastric artery, where communication is made with the retroperitoneal part of the abdomen and the opening of the external ring with its two pillars based on the body of the pubis, and with its apex extending for a variable distance upwards and laterally along the line of the canal; this lower opening gives egress to the cord structures, which then enter the scrotum. Clinically the size of this external opening varies considerably, from very small, not admitting the tip of the index finger, to large, when the apex of the external ring is situated almost in front of the internal ring. It is regarded as the upper limit of normality when the ring readily admits the index finger. Between these two areas, the internal and external rings, the abdominal wall is supported anteriorly by the external oblique fascia and the lower border, in its outer part, of the internal oblique muscle just above its origin from the inguinal ligament—this latter particularly so when the abdominal wall is contracted by reason of the lifting of the internal ring upwards and outwards by the contraction of the transversus muscle, to which the two ends of the internal ring loop are attached. This anterior wall exists only along the outer two-thirds of the canal; the medial third has no anterior wall, the opening of the external ring occupying this position.

The posterior wall, composed of the transversalis fascia, is thick, tough and strong in its medial part, where the canal is unsupported anteriorly, and thus the strength of the abdominal wall in this area is wholly dependent upon the integrity of this fascia. The fascia arises from the iliac fascia along the length of the canal below, and from the ileo-pectineal line of the pubis medially, to be attached above to the lower border of the conjoint tendon and the lower border of the transversus muscle. This gives a continuous sheet of fascia which forms the posterior wall of the canal behind the cord structures and in front of the extraperitoneal fat. As the transversalis fascia passes laterally, it changes at about the junction of the middle and outer thirds from the tough, thick fascia of the medial area (Hesselbach's ligament) to a thinner, membranous layer (Henle's ligament), which is frequently quite thin. While this fascia is in itself inert, contraction of the oblique muscles produces a tensing of this fascia, approximation of the anterior and posterior canal walls and protection against a rise in intraabdominal pressure. With this tensing of the posterior wall, the cord structures move downwards into the gutter formed by the recurving of the inguinal ligament which gives protection against compression.

The internal ring is quite a distinct entity and has the form of a "U"-shaped sling; each limb of the "U" is attached above and laterally to the lower border of the transversus muscle, the "U" encircling the cord structures below. As has previously been mentioned, contraction of the abdominal muscles lifts the ring upwards and laterally behind the internal oblique's lower margin. Much has been written about the size and repair of the internal ring in conjunction with oblique hernia repair. Further reference will be made to this when recurrences are being discussed.

In different individuals there is pronounced variation in the relative strength of the component parts of the canal,

by reason of both the distribution of the several anatomical structures forming the canal, and the quality and strength of such structures. Thus, a weak medial posterior wall is not infrequent, but yet may not become herniated over many years. Similarly, thin external oblique fascia, in which there are few if any intercolumna or interlacing fibres, gives rise to definite prominence along each inguinal canal, yet there is no herniation in the true sense. Any attempt at a surgical repair of this condition is most definitely contraindicated; if such an attempt is made, the result can be, and frequently is, disastrous. If anything is required to alleviate the patient's mental or physical discomfort, a light support only should be all that is needed. Such people can, of course, have an associated hernia in the same way as the more robust, and it is right and proper that surgical repair should be carried out, particularly so when the hernia is indirect.

Indirect Inguinal Hernia.

The persistence of a patent funicular process of peritoneum, varying in extent from a small sac at the internal ring through intermediate stages to the completely undifferentiated peritoneal protrusion with the testis lying therein, is a well-recognized embryological aberration, and as one would expect, it is responsible for the appearance of the commonest type of inguinal hernia. Commencing at the internal ring, it follows the course of the cord structures and is contained within the cord bundle. As a component of the cord structures it is obviously unrelated to the anatomy of the canal itself. Effective surgical treatment demands only the obliteration of this indirect sac, particular care being necessary to obtain adequate closure in the internal ring area. This, amongst other reasons, is why the invagination operation is favoured for this type of hernia.

The time of appearance and the mode of appearance vary considerably. This type of hernia is common at birth and in early infancy, when it is to be remembered that the sac is usually filled with peritoneal fluid; hence the name congenital hydrocele. This is a misnomer, as there is always an intraperitoneal communication at the internal ring, and therefore, correctly speaking, the condition is a hernia; yet it may not make its appearance until the later years of life. It is not uncommon for the inguinal swelling to become evident in the seventies, and no intermediate age is exempt.

As to appearance, the adolescent in particular may be quite unconscious of the presence of a hernia, his attention being drawn to the condition during a routine medical examination. At later ages cognizance of the condition is usual, and the history will vary with the social status and working conditions of the individual. Those not covered by the *Workers' Compensation Act* just happen to notice a swelling which has usually increased in size, and this leads them to seek medical advice. In a small percentage of cases a history of trauma is given. In contradistinction, the "compensable" group always relate the onset of swelling to an incident at work, recent or even in the distant past: "I lifted a heavy ledger"; "I kicked my toe on a step". In other cases, a definite and even severe injury has been followed by the appearance of a swelling. While many indirect hernias appear spontaneously, suggesting that the peritoneal opening at the internal ring is wide and patent, readily admitting abdominal contents, there can be no question that trauma plays a part in forcing abdominal contents into the preexisting sac, which then becomes obvious as a hernia. The extrusion of abdominal contents into a hernial sac necessitates a sudden, usually unexpected, rise in intraabdominal pressure, as it is obvious that filling of the sac must come from within the abdomen, and only such accidents as could lead to this sudden increase in intraabdominal pressure could legitimately be described as "causing the hernia". It would thus be obvious that direct trauma to the inguinal area—for example, a hit with the handle of a truck—cannot possibly be a causative factor in the "production" of a hernia. On the other hand, damage can be caused to an existing hernia, with the production of bruising and swelling of the contents leading even to obstruction. Such

an injury is followed by pain and increase of swelling, and produces an undoubted aggravation of the preexisting condition. Fortunately, such injuries are more commonly of a minor nature, and beyond temporary suffering and, from a compensation point of view, aggravation, lead to no serious consequences. One case, however, has been encountered in which a fall onto the pad of a truss led to a rupture of the bowel in the hernial sac, followed by a grave and prolonged illness. In passing it may be mentioned that the indirect hernia is very seldom controlled by a truss, and the truss pad is usually found compressing the hernial contents against the pubis, adding to the complaints of indigestion and flatulence. However, with certain types of direct hernia, a truss can be of definite value.

With muscular contraction, as has already been mentioned, the external ring narrows by approximation of the pillars and tensing of the posterior wall, thus diminishing the size of the canal outlet. This, in the presence of an indirect hernia, can cause compression injury to the contents, particularly to omentum, and at operation, from time to time, one sees the terminal portion of the omentum lying in the fundus of the sac, swollen, oedematous and hemorrhagic, the appearances suggesting an obvious cause—compression at the external ring.

Traumatic Herniation.

While it is agreed that the great majority of indirect herniae are congenital, a small percentage must be accepted as purely traumatic in origin. In such cases there is a fairly uniform history of a foot slipping while the patient was lifting or assisting to lift a heavy object, the result being likened to a minor degree of the "splits". This is accompanied by pain along the inguinal canal with tenderness on examination in the internal ring area and usually along the ileo-pectineal line; no swelling is obvious, and one is apt to ascribe symptoms to spraining of the insertion of the conjoint tendon. However, complaints of pain persist, and later the pain becomes more localized to the canal area. Gradually, usually within three to four months, an indirect hernia makes its appearance. The probable sequence is that the peritoneum at the internal ring is suddenly stretched and forced along the direction of the canal by increased intraabdominal pressure, initiating a hernial sac which, once started, continues to stretch and enlarge until it becomes obvious as a hernia. Peritoneal tension caused by stretching accounts for the persistent complaints of pain, in contradistinction to the comparative absence of pain when a preexisting sac is present. The possible reason why this should occur in some individuals will be considered later when recurrences are being discussed. It is the practice to warn such patients, and the insurers, should they be interested, of the probability that a hernia may develop later. It is believed that the result of such a sequence is a true traumatic hernia.

Direct Hernia.

While an indirect hernia does not, *per se*, imply any abnormality of the inguinal canal, a direct hernia denotes a deficiency of the abdominal wall in the canal area, occasionally congenital, but more frequently acquired, always involving the posterior wall most frequently in its medial part, and less frequently Henle's ligament and occasionally the posterior wall *in toto*.

Medial Direct Hernia.

The most common form of direct hernia involves the medial posterior wall of the canal, which loses its efficiency and ceases to function as an efficient part of the abdominal wall, allowing the abdominal contents with peritoneal and extraperitoneal coverings to protrude through the external ring to a varying degree. Such herniation, being outside the cord structures, does not follow their course into the scrotum with the same regularity as is the rule with the indirect hernia. Again, although at times large, this hernia does not attain the magnificent proportions seen from time to time when the hernia is indirect. The difference in appearance and the deficient posterior wall felt on palpation should readily lead to a correct diagnosis

except in the very fat, examination of whom is particularly difficult.

The onset of such herniae is usually insidious and again depends on intraabdominal pressure, usually progressive, and associated with an enlarging belly and increasing fat deposits in the area. Ill-conditioned abdominal musculature also plays a part. Trauma can also influence the onset of herniation, and certainly its aggravation. Such work as produces repeated rises of intraabdominal pressure—for example, the lifting of moderately heavy articles on to a bench by an individual who has weak transversalis fascia inadequately supported by large external rings—may be cited as an example within this category. While these herniae are usually slow to develop, sudden onset is possible. An example is a case in which a moderate-sized hernia occurred while the patient was in the act of mounting a flighty horse. This indicates the sudden splitting of the transversalis fascia. At operation, either the transversalis fascia is found as a thin fascial sheet stretched over the sac, or this fascia appears to be nonexistent, the sac wall being peritoneum covered externally by thick extraperitoneal fat.

Fenestration Hernia.—As a variant of the foregoing, a fenestration hernia which occurs in the medial area is seen at operation to come through a fenestration in the transversalis fascia, buttonhole-like in character, usually situated in the fascia itself just below about the middle of the conjoint tendon. The margins of the opening are well defined, and the opening just admits the tip of the finger. The remainder of the fascia appears normal. Rarely this opening is situated adjacent to the pubis between this and the transversalis fascia on its lateral aspect. It would seem probable that both these conditions are of congenital origin. Efficient repair is difficult.

Lateral Direct Hernia.

While the outer third of the transversalis fascia is normally thin with little apparent protective strength, it is unusual to find stretching of this area comparable to that seen in the adjacent medial region; however, such a condition does occasionally occur. Herniation through the outer part of the canal more usually arises just medial to the internal ring and is fairly uniform in type, being a finger-like protrusion composed almost entirely of extraperitoneal fat, thick in texture and firm. A small peritoneal sac exists with an extremely narrow lumen except in the larger examples, which are far from common. The hernia resembles a solid core of fat lying outside the cord bundle, above and on its inner side. The condition can be easily overlooked at operation, as no indirect sac can be found, and the fatty protrusion will readily slip back behind the level of the transversalis fascia. The hernia is seldom large, and again seldom extends beyond the level of the external ring. Clinically the determination of the exact nature of the swelling can be extremely difficult, although experience, together with the unusual feel of the protrusion at examination, may lead one to suspect the correct diagnosis. The aetiology is obscure. Why should what is largely extraperitoneal fat herniate in this situation? The peritoneal component is obviously too small to have contained abdominal contents and is undoubtedly a traction phenomenon. It seems unlikely that increased intraabdominal pressure plays any part, nor can one ascribe its origin to trauma.

Hernia Involving the Whole of the Posterior Wall.

Most frequently occurring on the left side, the sliding hernia presents itself in the middle-aged or elderly man as an irreducible or partially reducible hernia. The history is one of gradual onset with steady and progressive increase in size; one is told that up till a year or two ago the protrusion could be reduced or would go back after the patient lay down, but more recently it has become irreducible. Owing to this it becomes impossible adequately to examine the external ring, and more particularly, the posterior wall. However, the history arouses strong suspicion as to the exact nature of the lesion.

At operation pelvic colon is found going down into the scrotum covered anteriorly by parietal peritoneum, the

colon forming the posterior wall of the hernial sac. After reduction of the abdominal contents, it is found that the transversalis fascia, in both its medial and its lateral parts, is non-existent, and one is faced with the problem of reconstructing a complete new posterior wall.

From an etiological point of view it would not seem unreasonable to assume a congenital absence of transversalis fascia at least in its outer part, or alternatively, fascia of such poor quality as to afford little if any support to the inguinal canal. With increasing intraabdominal pressure usually associated with excessive fat deposit, a gradual peritoneal advance along the unprotected area takes place, and by traction on the posterior peritoneum, the pelvic colon, or on the right side the caecum, comes to take its place as a component part of the hernia.

Recurrent Herniae.

In both the indirect and direct herniae, including all the variants, recurrences are seen irrespective of the type of operation employed. This must indicate (i) a fault in technique, (ii) a false concept as to the requirements demanded by a particular type of hernia and the consequent use of inadequate procedures, and (iii) an unrecognized and hence uncorrected abnormality, which in itself leads to a pronounced predisposition to hernia formation.

In the repair of the indirect hernia, as has already been pointed out, the canal is otherwise normal, and it remains only to ablate the sac. The invagination method is preferred, as by its use not only is the sac completely obliterated, but in addition some tensing of the peritoneum in the internal ring area is produced, so that the possible small depression, or dimple which may remain after ligation of the neck of the sac, is avoided. When the hernia is again in evidence with the first cough or when the patient gets out of bed, one may assume that the sac has not been found, or has been inadequately dealt with. As has previously been mentioned, it is very easy to overlook outer direct herniae unless the condition is borne in mind and carefully searched for.

Any attempt at a so-called "repair" of the normal canal is unwarranted, as it is contended that one cannot improve upon normal anatomy, and furthermore, untoward results do from time to time follow such interference. The Halsted type of operation, obliterating the canal and transferring the cord structures anterior to the external oblique fascia, is surgically most unsound, and is frequently followed by herniation through the direct opening at the internal ring area. Repair can be extremely difficult.

Into the third category fall those indirect recurrences which make their appearance months after operation on the original hernia, and with these are included those cases of true traumatic aetiology mentioned earlier. Such recurrences make their appearance with or without associated trauma after operation which has been skillfully carried out, and which has fulfilled all the apparent requirements. Whatever is responsible must be centred at the internal ring area. At subsequent operation no abnormality of the ring itself can be detected in the majority of cases, so that the ring *per se* does not offer sufficient explanation. In the searching for other possible explanations, the internal ring areas have been carefully inspected from within during the performance of operations on the lower part of the abdomen. The appearance has been found to vary. In what is considered the normal, peritoneum stretches across the canal area from the pelvic region laterally as a smooth, flat surface; palpation reveals the site of the inguinal ring lateral to the deep inferior epigastric artery, but this is not obvious to inspection. In the less frequently seen arrangement, a definite fossa can be readily observed lying laterally to the epigastric artery, which structure runs as a prominent ridge upwards and medially to the lateral border of the rectus. This fossa immediately overlies the site of the internal ring, and it is suggested that its presence is sufficient to initiate a traumatic or recurrent indirect hernia under suitable circumstances—that is, increased intraabdominal pressure whether persistent or intermittent. May it not be advisable, therefore, when such circumstances are found to occur, to divide the artery and accompanying veins and thus

obliterate the ridge and fossa produced by these short or tight vessels? As the internal ring is fixed by attachment to the transversus muscle, no medial displacement of the ring should result to disturb the normal anatomy of the canal.

Direct Recurrences.

Operation on the direct hernia involving either the whole or the medial part of the posterior wall requires reconstruction or replacement of the transversalis fascia, with or without anterior wall repair, according to the size and laxity of the external ring and adjacent external oblique fascia. It may be pointed out at the outset that operations of the Bassini type rarely fulfil these requirements, and it is impossible to carry out this type of operation when there is present a wide gap involving the posterior wall associated with a narrow conjoint tendon and often a poor quality inguinal ligament. Further widening of the space between the conjoint tendon and the inguinal ligament results through tearing of both these structures by the stitching and from pressure necrosis, or both, the resulting recurrence being even more difficult to repair than the original hernia. When reasonable transversalis fascia still exists as a covering of the direct sac, this may at times be utilized to effect a posterior wall repair. At other times, adjacent fascia or an extraneous substitute is necessary. No herniotomist is completely satisfied with his results in the surgery of the direct hernia, as can be realized by the recurrences one sees after one's own operations and the operations of others. Again, the number of variations in operative technique and the variety of materials which have been used for substitution repair testify to the lack of uniform satisfactory results.

The transversalis fascia is a continuous sheet, and its repair, certainly in theory, should entail a restoration of the continuity, either by repair, or by substitution of a tissue or substance which will unite with the margins to which it is attached, and which will be resistant to the stretching effects which led to the original hernia. The wire filigrees do not fulfil these requirements, but have their advocates who claim for them good results. Anterior support for the margins of the filigree is required, and in the sliding variety of hernia there is frequently insufficient recurved inguinal ligament to give this support. Should infection occur, a serious problem arises in the extreme difficulty found in attempting to remove the foreign bodies.

Skin grafting gives a percentage of very satisfactory results, but is not the complete answer; unfortunately, although the graft readily adheres and even becomes transposed into a fascia-like membrane, it has in some individuals a tendency to stretch, leading to recurrence. Rarely, an epidermal cyst develops. One such case has been encountered.

Advance publicity for polyvinyl sponge foreshadows a substance full of promise. Adherence to the margin is said to be good, firm union taking place. The substance itself is slightly elastic and will withstand pressure, and it is a non-irritant. Should polyvinyl sponge live up to expectations, it may well play an important part in hernial repair.

While surgery plays an essential part in the treatment of a hernia, it is of considerable importance to eliminate or at least keep within due bounds such reversible factors as lead to herniation. Of these the most important by far is increased intraabdominal pressure from fat distension of the abdomen. The abdominal girth must be reduced, and when possible, the abdominal musculature should be restored to something approaching normal by suitable exercise and work. In the grossly over-fat, operation without reduction of the intraabdominal pressure is doomed to failure.

Conclusions.

Hernia is a common condition, the surgical treatment of which demands a knowledge of the diverse anatomical variations which are associated with the different types. These anatomical variants dictate the type of operative procedure required.

Over the past two decades considerable advance has been made in the surgical treatment of hernia, not so much in

the devising of new operations, as in the better understanding of the surgical requirements demanded by each patient's type of hernia, and particularly in the better understanding of the physiology of repair and the requirements of rehabilitation. As a direct result, the period in hospital has been reduced to a few days, and the time off work to three to four weeks for the manual worker and to an even shorter period for the business executive. This is of considerable economic importance, particularly in these days of high-pressure business and of rising wages and living costs, in addition to the fact that the incidence of the condition is increasing, if one can judge from the number of cases encountered, especially in the compensation field. The addition of the aggravation clause in the *Workers' Compensation Act* has brought many more workers within the ambit of this Act; but even apart from this, the incidence of the condition appears to be on the increase. This widening of the application of the Act has made it necessary for the surgeon to reconsider the whole aetiological aspect to cover aggravation as well as causation. This aspect has been briefly reviewed, with the hope that a sufficient skeleton upon which to build a case for the determination of compensability would be given.

The conclusions arrived at are the result of observations over a series of 2800 odd cases encountered during the last seventeen years. Admittedly they are based to a large extent on the histories given; but there is a pronounced similarity of such histories, which lends weight to the overall picture. The hernia associated with a deficient posterior wall plus increased intraabdominal pressure is well recognized; but the part played by the deep inferior epigastric artery in the production of a traumatic or recurrent indirect hernia has received little attention. As far as is known, such a concept is not referred to in the literature.

Some revision of the old accepted symptoms of a traumatic hernia may not be out of place. Such old favourites as immediate vomiting, sweating and shock must be extremely rare, if they do occur. One does not recall having encountered a case in which these symptoms did occur, certainly not for many years. Nor is it believed possible on clinical examination to give an estimate of the length of time during which a hernia has been in existence. A hernia may remain small for many years, or alternatively may be of quite large proportions at the time of its appearance. Even at operation, while one can occasionally say that there has been recent trauma—as, for example, when oedematous hemorrhagic omentum is seen, or when the sac wall is oedematous—there are still no grounds upon which to base an opinion as to the length of time during which the sac has been present. One must admit, of course, that the hernia reaching almost to the knee is probably of long duration; but even in these cases the sac itself is usually thin, the outer coverings of the cord structures being hypertrophied and thickened. Of what purpose, then, is the question "Is the sac wall thin or thick?" as posed by the insurance companies, who then propose to accept or deny liability according to the answer.

Reports of Cases.

SEVERE ACUTE DILATATION OF THE STOMACH (GASTRO-SUCCORRHEA).

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ACUTE dilatation of the stomach, though uncommon, still occurs with sufficient frequency to keep the clinician constantly on the alert for the possibility of its occurrence after any operation or trauma, or indeed, in any type of illness at all.

In a series of ten episodes of severe acute dilatation of the stomach occurring in nine cases, in three it occurred

after cholecystectomy and choledochotomy for gall-stones (Cases I, II and III), and in one it followed a cholecystectomy for gall-stones with a simultaneous gastro-enterostomy for a stenosing duodenal ulcer (Case IV). A similar episode occurred in this last-mentioned case after a nylon weave repair of an incisional hernia some months later. In Case V acute dilatation of the stomach followed a laparotomy performed to exclude the presence of a carcinoma in generalized large bowel diverticulosis. The patient in Case VI sustained a fracture of the thoracic segment of the spine, and acute dilatation occurred almost immediately when the spine was placed in hyperextension. In Case VII the patient sustained multiple pelvic fractures with wide separation of the components of the *symphysis pubis*. Attempted treatment by suspension in a pelvic sling caused immediate acute gastric dilatation.

These seven patients all recovered from their eight episodes; but two patients (Cases VIII and IX) both died. In Case VIII the patient had acute duodenal stenosis due to a periduodenal abscess arising from a penetrating duodenal ulcer. The abscess was drained and an anterior gastro-jejunostomy was performed; but the patient died from acute dilatation of the stomach which did not yield to treatment. In Case IX the patient had a large-bowel obstruction of six days' duration due to carcinoma of the sigmoid colon. A transverse colostomy was performed, but death occurred from acute dilatation of the stomach.

Case I.

The patient was a man, aged thirty-three years, who had suffered from attacks of biliary colic at fortnightly intervals for eight years. Seven years after the onset of his illness the patient passed some hard, faceted, green gall-stones in his faeces. Six months later the attacks of pain began to be accompanied by jaundice, with the passage of pale motions and dark urine. The patient became anæmic and lost two stone in weight.

Six months later the patient was admitted to hospital, where examination showed him to be a thin but otherwise healthy-looking man. There was tenderness in the right hypochondrium. Cholecystectomy and choledochotomy were performed. The gall-bladder was chronically inflamed and full of small, faceted, infective calculi. The cystic duct was dilated and full of similar stones. The common duct was dilated, but no calculi were found when it was explored. No fistula was found between the gall-bladder and the alimentary canal. After exploration the opening in the common duct was sutured and a tube was placed down to it. All was well for forty-eight hours, when staphylococcal pneumonia developed, affecting the lower lobes of both lungs.

On the third day after operation he suddenly collapsed, with the clinical picture of peripheral circulatory failure. He was cold, clammy and sweating, with a very high pulse rate and low blood pressure. A small amount of brown fluid resembling coffee grounds was trickling from his mouth. There was a little distension of the upper part of the abdomen. He did not complain of abdominal pain, and there were no areas of tenderness or rigidity in the abdomen. Treatment was instituted immediately. The stomach was aspirated of three litres of feculent fluid. Continuous suction was then applied, and nine litres of fluid were removed during the next twelve hours, with lessening amounts thereafter. Intravenous therapy was commenced, two veins being used simultaneously. The fluid balance was maintained with the transfusion of blood, serum, and normal saline with potassium.

During the next two days he had complete anuria, and the blood urea level rose to 164 milligrammes per 100 millilitres, later falling to 33 milligrammes per 100 millilitres over the next fourteen days.

Recovery gradually occurred over the next six days, at the end of which period the stomach tube was removed, the aspirate being clear, normal gastric juice. Feeding by mouth was then gradually reinstituted and he was able to be discharged from hospital three weeks after the operation, by which time his lung condition had also abated.

Case II.

The patient, a woman, aged forty-nine years, had suffered for two years from recurrent biliary colic of increasing severity, so that in the three weeks prior to operation each attack was accompanied by vomiting. The patient had lost two stone in weight. She had never been jaundiced. Examination of the patient disclosed a tender, palpable gall-bladder.

Operation revealed a chronic empyema of the gall-bladder; many infective calculi were present, one of which was impacted in the cystic duct. Many calculi were present in the common bile duct and in both hepatic ducts. The gall-bladder was removed and the stones were removed from the common and hepatic ducts. The opening in the duct was then sutured, and a tube was placed down to the suture line.

The patient was well until the fifth day, when she suddenly collapsed, with a pulse rate of 180 per minute and a blood pressure so low that it could not be measured by the sphygmomanometer. At the same time a trickle of brown fluid was observed to come from her mouth. She made no complaint of abdominal pain, and the only relevant abdominal finding was some distension of the upper part of the abdomen.

A stomach tube was immediately passed, and four litres of brown, turbid, foul-smelling fluid were removed. Intravenous therapy was commenced at the same time. The stomach tube was able to be removed and the intravenous therapy was stopped four days later, when oral feeding was gradually commenced. She was able to be on a full diet some six days later.

Case III.

The patient was a woman, aged seventy-two years. Twenty-two years prior to her present illness she had undergone a cholecystostomy for gall-stones; this was followed by a "laparotomy for adhesions" some months later. This operation was eventually followed by a large incisional hernia. Four years prior to her present illness she had suffered from pneumonia; this had been followed ever since by failure of the right side of the heart with breathlessness on exertion and oedema of the ankles necessitating treatment by digitalis and mersalyl. One year prior to her admission to hospital she had suffered further attacks of biliary colic and jaundice. These attacks were occurring with ever-increasing frequency and intensity, so that in the week prior to her admission to hospital they made her vomit severely. In the previous two years she had lost two stone in weight.

Examination disclosed that the patient had a temperature of 100° F. and that she was jaundiced. Tenderness and rigidity were present in the right hypochondrium. Through the incisional hernia in the old upper right paramedian incision a tense, extremely tender gall-bladder was palpable. Pronounced mitral stenosis with auricular fibrillation was present, controlled by digitalis so that the apex beats numbered 50 per minute. The blood pressure was 160 millimetres of mercury, systolic, and 85 millimetres, diastolic.

On the following day the pain and the abdominal signs became worse, so that operation was performed. A large, thick-walled gall-bladder was found, full of pus and stones, one of which was impacted in the cystic duct. At the gall-bladder fundus a patch of gangrene was present. The dilated common duct contained many calculi, but the bile was normal. The gall-bladder was removed, as were the duct calculi. The opening in the duct was sutured and a tube was placed down to it. No attempt was made to repair the hernia.

The early post-operative period was normal, but on the fifth day after operation the patient vomited once for no apparent reason. On the sixth day bowel sounds were present and she passed flatus. That evening, however, there occurred sudden painless distension of the upper part of the abdomen, with frequent small eructations of brown, faeculent fluid and peripheral signs of oligæmic shock. There was no abdominal tenderness or rigidity, and bowel

sounds were present. The pulse rate rose from 50 to 150 per minute, and the heart was as usual fibrillating. The blood pressure dropped from 160 millimetres of mercury, systolic, and 100, diastolic, to 70, systolic, and 50, diastolic. The tube down to the common duct had commenced to drain bile on the third day after operation, and it continued to do so until the twenty-fourth day.

The stomach was immediately drained of three litres of faeculent fluid and intravenous therapy was instituted. Six days later the stomach aspirate was clear, and after it had been made certain that fluid was being passed on, the tube was removed. The patient was discharged from hospital on the twenty-fifth day after operation.

Case IV.

A male patient, aged fifty-five years, had a history of biliary colic and vomiting of three years' duration. The vomiting became worse, occurred after almost every meal, and was not associated with the colic. At operation he was found to have chronic cholecystitis with gall-stones and duodenal stenosis due to the fibrosis of an ulcer of the first part of the duodenum. Cholecystectomy was performed and an anterior gastro-jejunostomy was established.

For two days after operation he was treated with Ryle's gastric drainage, with the appropriate intravenous replacement of water and electrolytes. All was well on the third day and the Ryle's tube was able to be removed, as bowel sounds were present and the stomach was obviously propelling fluid along to the small bowel.

However, on the fourth day after operation the patient collapsed with acute dilatation of the stomach, from which three litres of faeculent fluid were immediately aspirated. Suction was then recommenced. The patient recovered from this four days later. However, the following day, the eighth after operation, he suffered from a complete wound dehiscence requiring suture under "Pentothal" anaesthesia with a relaxant. Recovery eventuated, but later a wound hernia developed.

Six months later the wound hernia was repaired by the nylon weave method. Convalescence was complicated on the third day by a further episode of acute gastric dilatation lasting four days. Recovery followed treatment by the usual method of gastric aspiration and intravenous therapy.

Case V.

A male patient, aged seventy years, had a history of six months' irregular passage of bright blood *per rectum*, associated with cramping abdominal pains. As radiological studies of the gastro-intestinal tract revealed equivocal results apart from generalized large-bowel diverticulosis, laparotomy was performed. This revealed only diverticulosis of the large intestine from the hepatic flexure to the rectum. There was no evidence of intraabdominal neoplasm.

Convalescence was complicated on the third day by severe acute dilatation of the stomach, from which recovery eventuated after four days of gastric suction and fluid replacement therapy.

Case VI.

A man, aged thirty years, sustained a fracture of the bodies of the ninth and tenth thoracic vertebrae when he fell from a height onto his feet. Some six hours after a plaster jacket had been applied with the spine in hyperextension, he developed acute dilatation of the stomach. This yielded in three days to treatment by removal of the plaster cast and cessation of the spine hyperextension, with emptying of the stomach followed by continuous aspiration and intravenous replacement therapy in three days.

Case VII.

A man, aged seventy years, fell off a roof and sustained multiple fractures of the pelvis, both anteriorly and posteriorly. There was wide separation of the components of the *symphysis pubis* with paralysis of the bladder, which was otherwise uninjured. The patient was in a state of severe shock. This was overcome by blood transfusions, and twenty-four hours later he was treated, with overhead

suspension in a pelvic sling to reduce the dislocated symphysis. However, twelve hours later he developed acute dilatation of the stomach. This was treated by cessation of the suspension, and emptying of the stomach followed by continuous suction and intravenous therapy for a further three days, after which convalescence proceeded smoothly.

Case VIII.

A man, aged sixty-five years, had had a duodenal ulcer for ten years, causing epigastric pain and occasional attacks of vomiting. This pain had become more severe in the month prior to operation and radiated to the right side of his back. In the week prior to operation he had continual attacks of vomiting of partially digested food. On the day of his admission to hospital the pain became very severe and he collapsed in shock.

Examination disclosed the patient to be in a state of shock, although his pulse rate was only 100 per minute and his blood pressure was 160 millimetres of mercury, systolic, and 100, diastolic. Tenderness and rigidity were present in the upper part of the abdomen. The diagnosis of a perforated duodenal ulcer was made. After resuscitation and the passage of a Ryle's tube, operation disclosed a large periduodenal abscess with a small perforation into the general peritoneal cavity. The abscess was arising from a chronic fibrosing ulcer of the first part of the duodenum, which had caused almost complete stenosis. The abscess cavity was drained and an anterior gastro-jejunostomy was established.

Convalescence was uneventful for three days, the blood pressure rising to 200 millimetres of mercury, systolic, and 100, diastolic. The Ryle's tube was able to be removed and the intravenous therapy to be suspended on the third day. Two days later, the fifth day after operation, the patient suddenly collapsed; the blood pressure fell to 120 millimetres of mercury, systolic, and 60, diastolic, and the pulse rate rose to 160 per minute. There were continual eructations of small amounts of feculent fluid. There was no abdominal pain or tenderness, but upper abdominal distension was present.

The stomach was immediately emptied of three litres of feculent fluid, and continuous aspiration and intravenous therapy were instituted. For the next six days, though the patient's condition remained reasonably well, with more or less normal serum electrolyte values, with the exception of electrocardiographic evidence of potassium lack, a great amount of gastric aspirate was withdrawn daily, and it remained feculent in character. It was decided that a stomal blockage must be present, so laparotomy was performed on the eleventh day after operation—that is, six days after the dilatation had commenced. The findings did not confirm the presence of stomal oedema, the stoma being patent. However, the stomach and the afferent and efferent limbs of the jejunal loop used in the anastomosis were dilated, whilst the rest of the small bowel was collapsed.

The patient then went steadily down hill; he had oliguria, with albumin, casts and red cells in the urine, proceeding to anuria and finally to death in uræmia, the blood urea content being 250 milligrammes per 100 millilitres.

Autopsy confirmed the laparotomy findings. Chronic nephritic changes in the kidneys were also present.

Case IX.

A man, aged seventy-five years, had a six-day history of complete large bowel obstruction supervening on incomplete obstruction of some three weeks' duration due to carcinoma of the sigmoid colon. The abdomen was very distended and the patient was vomiting and dehydrated.

Gastric aspiration and intravenous therapy were instituted. A transverse colostomy was established under "Pentothal" anaesthesia with a relaxant. However, in spite of the presence of the indwelling Ryle's tube and intravenous fluid and electrolyte therapy, on the third day after operation acute dilatation of the stomach suddenly occurred, causing collapse of the patient. In spite of treat-

ment, death occurred two days later from uræmia with anuria.

No autopsy was permitted.

Causation.

The causation of this acute gastric dilatation is quite unknown; it may occur after any operation, trauma or illness. In none of the cases here was there any pre-operative purging, ether anaesthesia or, I trust, rough intra-abdominal manipulations—often mentioned as predisposing causes.

However, apart from the lesion for which these patients were being treated, five patients had age against them, being aged sixty-five years or over; one patient (Case I) had staphylococcal pneumonia, another (Case II) was a heavy smoker, and yet another (Case III) had failure of the right side of the heart due to mitral stenosis accompanied by digitalis-controlled fibrillation. In all instances, except those due to injury, the illnesses had been present for a long time, often for many years.

Pathology.

The name "acute dilatation of the stomach" implies that this sudden dilatation is the primary mechanism of this syndrome. This is wrong because actually the dilatation is secondary to the real primary mechanism, which is one of rapid outpouring of a great amount of gastric secretion. This syndrome therefore may be more correctly termed "acute gastro-succorhea".

Actually, as well as the stomach, the duodenum and jejunum may be involved, so that all this—the secretory portion of the alimentary canal—may be greatly dilated as a consequence. This sudden outpouring of secretion causes such acute distension of these organs, with overstretching and consequent paralysis of their muscle coats, that not even vomiting can occur and only a trickle of fluid escapes up the oesophagus to the exterior by virtue of the great rise in intraluminal pressure which the gastro-succorhea causes in the stomach. This muscle paralysis prevents the onward passage of the increased stomach contents, so that though there is no organic block to the onward passage of the fluid as in pyloric stenosis or stomal oedema, there is a functional block which is just as effective as a mechanical one. (This was well shown at laparotomy in Case VIII.)

The fluid in acute gastro-succorhea has been studied by Starr (1953), and it has the properties of gastric juice in its early stages. Its loss to the body means a loss of potassium and chloride ions without a corresponding loss of sodium ions. This was well shown in Case I, in which there was a loss of 36.5 milliequivalents of potassium in the aspirate at the clinical onset of the catastrophe, which fell to seven milliequivalents as the lesion regressed. However, the electrocardiogram seemed to be the most sensitive indicator of potassium deficiency, its tracings showing the effects as lasting up to ten days after the commencement of the illness in spite of the early intravenous administration of potassium-containing solutions such as Darrow's solution.

So much fluid is lost so suddenly from the body into the stomach that oligemic shock is present, with haemoglobin values reaching as high as 19 grammes per centum (Case I). This may lead to prerenal uræmia with oliguria, the urine containing albumin, casts and red blood cells, with a rising blood urea content (Cases I, VIII and IX); this may lead to death from uræmia (Cases VIII and IX), especially if the kidneys are the seat of chronic nephritis (Case VIII).

Starr (1953) pointed out that this condition, which concerns the secretory section of the bowel, is not analogous to the paralytic ileus of the absorbing section of the bowel, because the latter is primarily a true ileus or paralysis with distension secondary to it, the bowel being filled with fluid and air. In gastro-succorhea the secretion of fluid is the primary and distending factor, and little or no air is present. To accentuate further the difference between these two conditions, acute dilatation of the

stomach may be present even though the bowels have been opened and peristaltic sounds are present (Case III).

This condition may recur in subsequent operations even of a different nature (Case IV).

Age and Sex.

In this series there were seven male subjects, whose ages were respectively thirty, thirty-three, fifty-five, sixty-five, seventy (two patients), and seventy-five years, and two female subjects, whose ages were respectively forty-nine and seventy-two years.

Symptomatology.

Time of Onset.

After operation this condition is usually said to occur on the second day. In this series it revealed its presence on the third day in four instances (Case I; Case IV, the second episode; Case V; Case IX); on the fourth day in one instance (the first episode of Case IV); on the fifth day in two instances (Cases II and VIII); and on the sixth day in one case (Case III).

After injury (Cases VI and VII), the episode occurred not so much after the actual injury as after its treatment, when it occurred within a few hours.

It is certain that acute gastro-succorrhœa occurs for a short while at least before the dramatic clinical picture is seen, because when the condition is first recognizable clinically the stomach is distended with fluid already feculent in character. It is noteworthy that in Case IX, in which a Ryle's tube was already present in the patient's stomach when the episode occurred, when the stomach was emptied two hours prior to the clinical onset of the dilatation the fluid was colourless and clear. When the fluid was withdrawn immediately dilatation occurred, it was feculent; this shows the speed with which the character of the gastric contents can change. It is interesting to note that though the fluid can change from normal, clear, colourless gastric juice to feculent fluid in a matter of two hours or so, it may take up to ten days to traverse the reverse order back to normal.

Clinical Picture.

The clinical picture in all these severe cases was dramatic and characteristic. The condition first presented itself in each patient with the picture of a sudden oligæmic shock with peripheral circulatory collapse. In a few moments a seemingly well patient, with no complaint of chest or abdominal pain or discomfort, became almost moribund for no apparent reason, the clinician's first attention thus being directed towards the cardio-vascular system, because the pulse became so fast as to be uncountable at the wrist. Auscultation of the heart revealed rates as high as 190 per minute. The brachial blood pressure dropped as low as 70 millimetres of mercury, systolic, and 40, diastolic, and in some cases it could not be registered.

Examination of the abdomen revealed only a little distension of the upper part of the abdomen, which was not painful or tender. It was unaccompanied by rigidity.

In no instance was there frank vomiting. Mostly there was only a trickle of brown fluid from the patient's mouth. The presence of this fluid gave the clue to the diagnosis, and on the immediate passage of a stomach tube, even a small-bore one such as a Ryle's or a Wangenstein's tube, up to four litres of similar fluid could be withdrawn in a matter of fifteen minutes or so, to be followed by as much as nine litres in the next twenty-four hours with diminishing amounts over the next few days.

The shock-like state in this series lasted for as long as twelve hours in spite of treatment, and was then followed by a slow recovery over a further five or six days, when the body with the aid of treatment appeared to be adjusting its fluid and electrolyte balance, especially that of potassium. All patients developed the usual oliguria during this time, but three developed anuria—one (Case I) who recovered after two days' anuria and two others (Cases VIII and IX) who died of uræmia.

Treatment.

The immediate treatment is to empty the stomach as quickly as possible. Whilst this is being done, the shock state is counteracted as soon as possible with whole blood, the correct treatment for all forms of such shock. Whilst the appropriate blood is being obtained, serum albumin should be used. It may be necessary to use two veins simultaneously to give enough fluid quickly. After the patient's recovery from the shocked state, intravenous fluid and electrolyte replacement therapy is carried out in accordance with the clinical state of the patient, the fluid balance chart and the results of serum electrolyte estimations made by flame photometry. Serial electrocardiograms are important to watch the state of potassium balance. As loss of potassium is a prominent feature of this lesion, and as it may be present for as long as ten days, the administration of Darrow's or similar potassium-containing solutions is a most important feature of the electrolyte replacement programme.

Intravenous therapy is carried on as long as gastric aspiration is being carried out, and this may be for a week or even longer. It is at times difficult to know when to change from stomach aspiration and intravenous therapy to oral feeding. The character of the stomach aspirate will be noticed to change from being first brown, turbid and feculent, through yellow and green to clear and colourless. When this last stage is present, usually not before some five or six days, then the tube may be clamped and water given to see if it is passed on. Then oral feedings may be commenced cautiously; but if one hurries at this juncture the whole condition may recur.

Mortality.

This is a lethal condition, and it has a 40% mortality rate in some series.

Death may occur early in the state of shock if treatment is not immediate and vigorous. When it occurs later, it is usually from renal failure, as occurred in Cases VIII and IX in this series. In elderly patients whose kidneys are the seat of chronic nephritis, as in Case VIII, this is a predisposition to a fatal outcome.

Diagnosis.

In most instances, this lesion is reasonably easy to diagnose if the clinician is alert to its possibility. In cases in which an apparently causeless oligæmic shock-like state suddenly occurs after operation or trauma, the presence of a trickle of fluid resembling coffee grounds from the mouth, especially if there is some upper abdominal distension, will provide the diagnosis. Sometimes the trickle of fluid is absent and the distension is minimal. In cases of such doubt, the passage of a Ryle's tube will furnish the diagnosis.

Cases Occurring after Operations on the Biliary Tract.

Four of these ten episodes of acute gastro-succorrhœa followed an operation on the biliary tract. These four episodes occurred in a series of 430 operations on the biliary tract, in 66 of which the common duct was explored.

The importance of the occurrence of acute gastric dilatation after such operations is that it may superficially resemble a post-operative biliary extravasation of acute onset, in which, as was pointed out by McKenzie (1955), there may be little abdominal pain or distension, this lesion presenting also as a sudden shock-like state only. The passage of a stomach tube will differentiate the two conditions. This differentiation is, of course, extremely important, because, whilst gastro-succorrhœa yields to gastric suction and intravenous therapy, laparotomy with the appropriate surgical measures is mandatory for biliary extravasation.

Cases Occurring after Operations on the Stomach and Duodenum.

Cases occurring after operations on the stomach and duodenum are uncommon. The two cases recorded here as occurring after gastrotomy were in a series of 155 operations on the stomach and duodenum. Whilst acute

gastric dilatation with its sudden onset leaves little room for doubt as to its diagnosis, a less acute, less severe form of gastric dilatation, especially if it is prolonged as in Case VIII, will make one suspect that perhaps after all œdema of the stoma is the cause and so to perform an unnecessary laparotomy.

Summary.

A discussion of ten episodes of severe acute dilatation of the stomach occurring in nine patients is presented; two of these patients died. It is pointed out that this lesion should be called acute gastro-succorrhœa (which is the primary phenomenon) and not dilatation of the stomach (which is the secondary phenomenon).

The case reports are presented in full, and on them is based a discussion of the pathology, clinical picture and treatment.

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- MCKENZIE, G. (1955), "Extravasation of Bile after Operations on the Biliary Tract", *Australian & New Zealand J. Surg.*, 25: 181.
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DEATH FROM APLASTIC ANÆMIA FOLLOWING METHYL THIOURACIL THERAPY.

By HUGH R. G. POATE,
 Sydney,

WITH A PATHOLOGICAL REPORT BY W. E. STEHBENS,
 Department of Pathology, The University of Sydney.

Clinical Record.

Mrs. A., aged fifty-one years, was referred to me on June 8, 1956. She said that about the end of 1955 her left eye had become very puffy, and within a few days the right eye also swelled. She consulted an eye specialist in November, 1955, who told her that her sight was satisfactory, but that she had gland trouble which should be attended to. She did not consult her local doctor until May, 1956, and he referred her for my opinion. She had obvious bilateral exophthalmos with very swollen eyelids. Her pulse rate was 108 per minute, and she had lost about half a stone in weight in recent months. She had no tremor. The thyroid was not appreciably enlarged. Her weight was seven stone twelve pounds, as against her usual eight stone eight pounds. She did not look like the typical thyrotoxic patient, and it was thought that the condition was primarily due to some pituitary imbalance. The menopause had occurred two years ago, without any trouble. Her doctor was advised to give her methyl thiouracil, 0.1 gramme twice a day, and after four weeks to add *Thyroideum Siccum*, 0.5 grain twice a day, with phenobarbital, 0.5 grain, and B group vitamins.

On August 17, 1956, she felt well. Her pulse rate was 72 per minute, and she had gained eleven pounds in weight (to eight stone nine pounds). The conjunctiva in both eyes had become very congested and she was given cortisone eye ointment to use twice a day. The dosage of methyl thiouracil was reduced to 0.05 gramme twice a day. The thyroid had become slightly enlarged.

On November 5 she was not so well. Her pulse rate was 100 per minute and the thyroid was slightly enlarged. She had noticed some bruising recently and had had some mild epistaxis. Her blood pressure was 130 millimetres of mercury, systolic, and 80 millimetres, diastolic. Her skin had become dry and harsh, and she had lost three and a half pounds in weight (to eight stone five and a half pounds). The dosage of methyl thiouracil was increased to 0.1 gramme *mane* and 0.05 gramme *nocte*, *Thyroideum Siccum* to be taken as usual. She wished to return to the country that afternoon, so I gave her a note to her doctor asking for a blood count to be made.

On November 12 her doctor telephoned me and said that she was very ill; both eyes were very swollen and her temperature was raised. He had not been able to arrange for the blood examination. Her admission to hospital was arranged for that evening.

Her condition was very bad. The eyelids were ecchymosed and she could not open them. The conjunctiva was œdematous and injected. There were petechial hæmorrhages over various parts of the face, body and limbs. The uvula was bruised and swollen. She appeared grossly anæmic. Her temperature was 104° F. A blood examination gave the following information: the red cells numbered 1,280,000 per cubic millimetre and the hæmoglobin value was 4.4 grammes *per centum*; the leucocytes, numbering 1100 per cubic millimetre, consisted entirely of lymphocytes; platelets were very scanty. A blood transfusion was commenced, and she was given "Penicillin V" by mouth every six hours, and pyridoxine.

On November 15 she was given some packed red cells, and later in the day dextrose solution with "Terramycin". Next day she felt well and her general condition had improved considerably. The swelling of the eyes had subsided and she could open the eyelids. A blood examination showed that the number of red cells had increased to 4,200,000 per cubic millimetre, the hæmoglobin value being 9.6 grammes *per centum*. The leucocytes numbered 5200 per cubic millimetre, but there were no granulocytes and no platelets. Her temperature was normal, so intravenous therapy was stopped.

On November 17 she had some mild hæmaturia.

On November 18 she seemed well in the morning, but at 4 p.m. her temperature was 102° F. and her condition was deteriorating, so she was given intravenously dextrose with "Terramycin", to be followed by further blood transfusion.

On November 19 she had two copious mæna stools, and at 8 p.m. suddenly became comatose with signs suggesting a cerebral vascular lesion. Death occurred at 10.30 p.m.

Her family gave consent for a full post-mortem examination, which was carried out at the Royal Prince Alfred Hospital by courtesy of Dr. W. E. Stehbens, whose report follows.

Autopsy Report.

The autopsy was performed thirteen hours after death. *Rigor mortis* was present. The body was that of a middle-aged woman in a moderately good state of nutrition. Extensive purpuric spots were present over the entire body, particularly over the trunk, and some ecchymoses over the thighs and buttocks. There was bruising around both eyes producing considerable puffiness of the lower eyelids and some sub-conjunctival hæmorrhages. Small crusted lesions up to one centimetre in diameter were seen on the right upper and lower eyelids, about the nose and on the left cheek.

Internal Examination.

There were multiple petechial hæmorrhages in the mouth and pharynx, many of which were confluent, particularly in the floor of the mouth.

There were similar petechial hæmorrhages in the larynx and trachea, though they were not so extensive, and a considerable amount of clear mucus was present in the trachea.

The thyroid gland was slightly enlarged, fleshy and of uniform consistency. It had the appearance of a diffuse hyperplastic thyroid, and no colloid was seen on the cut surface.

There were multiple petechiæ throughout the mediastinum.

Each pleural cavity contained approximately two ounces of clear yellow fluid, and there were extensive areas of hæmorrhage and petechiæ beneath both the parietal and the visceral pleura on both sides.

The right lung weighed 915 grammes and the left 680 grammes. The bronchi of both lungs contained mucus, which was moderately blood-stained on the right side, and

beneath the submucosa were numerous purpuric spots. There were bilateral apical scars with a few emphysematous bullae on the left side. Both lungs were oedematous, the fluid expressed from the cut surface being blood-stained. Extensive areas of hæmorrhage were present throughout both lungs, particularly in the lower lobe and the inferior portions of the upper lobe of the right lung. In these areas the lung tissue was consolidated and very dark red. On the left side there were areas of hæmorrhage up to two inches in diameter, many of which were subpleural and resembled infarcts. However, there was no fibrin on the pleural surface, and no thrombi were present in the pulmonary arteries.

The pericardial cavity contained two ounces of clear yellow fluid, and petechiæ were thickly scattered in both surfaces of the pericardium.

The heart weighed 265 grammes. Each of the four chambers was slightly dilated, as were the atrio-ventricular valve rings. The left ventricle was not hypertrophied, and beneath the endocardium of all four chambers there were numerous petechial hæmorrhages; a few were to be seen in the myocardium, which was somewhat pale. There were some transverse striations over the papillary muscles in the left ventricle. The aorta was atheromatous throughout its descending segment, the condition being more pronounced distally, there being a few small areas of recent hæmorrhage into the intimal plaques.

The peritoneal cavity contained approximately four ounces of slightly blood-stained fluid. Apart from adhesions about the sigmoid colon, numerous petechiæ were the only abnormalities seen in the extraperitoneal tissue.

The spleen weighed 85 grammes. It was affected by early chronic perisplenitis, and the cut surface was pale and firm.

The liver weighed 1760 grammes. A few subperitoneal areas of hæmorrhage were to be seen on its surface; the cut surface was normal. The gall-bladder and bile ducts were normal.

In the gastro-intestinal tract the findings were as follows. The wall of the œsophagus contained numerous small purpuric spots. In the stomach more extensive hæmorrhages had occurred into the submucosa, and much of the blood had become confluent. The gastric contents were black; no bright blood was present. Throughout the remainder of the bowel there were submucosal hæmorrhages, most numerous in the colon. The contents of the intestine in many areas were blood-stained, but the rectum contained tarry fæces.

The right kidney weighed 155 grammes and the left 165 grammes. The kidneys contained a few small subcapsular scars, but no intrarenal hæmorrhage. The papillæ were pale. Hæmorrhage had occurred into the calyces and into the wall of the pelvis, and a few petechiæ were to be seen in the ureters.

The pancreas and adrenals appeared normal.

There were multiple petechiæ in the wall of the bladder. Examination of the uterus revealed senile atrophy, and the ovaries were small and fibrotic.

In the femoral veins there were no thrombi.

Lymph nodes were not enlarged.

The brain weighed 1230 grammes. When the *dura mater* was reflected there were many areas of hæmorrhage in the subdural space on both sides; but over the left cerebral hemisphere they were confluent, and some of this hæmatoma appeared to be older than the rest. There was blood in the subarachnoid space over the right frontal lobe, small in amount, but it was more extensive over the pons and medulla. In each cerebral hemisphere there were four small areas of hæmorrhage, the largest being a quarter of an inch in diameter. Petechiæ were present beneath the ependyma of each lateral ventricle, and the fourth ventricle was filled with blood clot. In the posterior part of the pons beneath the fourth ventricle there was a small area of hæmorrhage. The cerebellum contained an extensive area of multiple, small hæmorrhages, many becoming

confluent, the whole area measuring two inches in diameter. The pituitary was of normal size and it had a few small hæmorrhagic spots near the stalk of the gland.

The bone marrow of the sternum, ribs and vertebrae was dark pink. In the right femur the red marrow appeared to have extended into the upper half of the shaft, but these were only small foci.

Histological Findings.

The results of the histological examination were as follows.

The thyroid gland was hyperplastic and there was little colloid present.

In the lungs there was considerable patchy hæmorrhage into the alveoli, some of which contained organizing fibrin; but no leucocytic infiltration was to be seen. Many alveolar macrophages contained hæmosiderin. No thrombi were present in the vessels.

The renal parenchyma was congested, and there was massive extravasation of blood into the renal pelvis.

In the bladder, multiple hæmorrhages were seen in the submucosa.

In the spleen, there was an increase in reticulum cells and plasma cells; the latter were actively dividing.

In a lymph node, plasma cells were increased in number.

Multiple hæmorrhages of recent origin were seen in the brain.

The pituitary appeared normal, apart from a small extravasation of blood in the posterior lobe.

In sections of marrow from the sternum, vertebrae and a femur there was practically no hæmatopoietic tissue present, but plasma cells and lymphocytes were the predominant cells. There were small extravasations of blood in the fatty marrow.

The liver, pancreas and adrenals appeared normal.

Principal Diseases.

The principal diseases were as follows: aplastic anæmia (following methyl thiouracil therapy); widespread purpura with cerebellar hæmorrhage; diffuse hyperplasia of the thyroid.

Discussion.

Since the introduction of the antithyroid drugs by Astwood I have had a wide experience with many compounds; but this is the first fatal case of its kind that I have encountered. I have been consulted by patients with varying degrees of neutropenia and by several who have had temporary agranulocytosis; all have responded well to treatment. The condition most commonly occurs about the fourth to eighth week after the commencement of treatment, during the period when dosage is relatively high. In the case under review the dosage was very small. It was obviously a mistake to increase the dosage slightly when the patient was examined on November 5, 1956, when she had noticed bruising and had epistaxis, although there was no sponginess of the gums and no throat signs were present. Administration of the drug should have been stopped at once, an immediate blood count made, and the patient sent into hospital that day, although, to judge from the post-mortem and histological findings, it would seem that the bone marrow had gone beyond any chance of recovery.

Reviews.

Relaxation and Exercise for Natural Childbirth. By Helen Heardman; 1956. Edinburgh and London: E. and S. Livingstone, Limited. 7½" x 4½", pp. 32, with 22 illustrations. Price: 1s.

This little booklet has been written to give the mother-to-be a series of practical exercises and rules after the school of Grantly Dick Read, and to tell the father-to-be of the part he is expected to play in making the birth of their child a truly happy event.

The 32 pages of the booklet contain numerous sketches and diagrams, which fully illustrate the text and make the exercises very simple to follow. Due stress is placed upon the correction of posture and also on the importance of relaxing correctly. The sequence of events in the stages of labour are also fully detailed.

Following the procedure outlined, this booklet will make childbirth the natural phenomenon it is meant to be, and doctors can confidently recommend this work to their patients.

Pædiatrics for the Practitioner: Supplement 1956. Under the general editorship of Wilfrid Gaisford, M.D., M.Sc., F.R.C.P., and Reginald Lightwood, M.D., F.R.C.P., D.P.H. London: Butterworth and Company (Publishers), Limited. 9½" x 6½", pp. 130, with illustrations. Price: £2 6s. 6d.

This work is divided into two sections. The first consists of two original articles, one being a concise but instructive review of physical changes at puberty by Dods, the other a long, detached and helpful article on the care of children in the tropics by Woodruff. This latter article considers most tropical diseases as they may affect children.

The second section has the unfortunate title of "Noter-up", and consists of amendments and additions to be made to the text of the original three volumes. Included in this section are some additional notes on the care of the newborn, with mention of kernicterus in premature infants. Additional information on antibiotics is given, and the place of steroids in the treatment of rheumatic fever, leucæmia and nephrosis is discussed. The use of antimetabolites in leucæmia is described, as also is the treatment of coeliac disease with a gluten-free diet.

International Congress of Gastroenterology: Fifth Meeting of L'Association des Sociétés Européennes et Méditerranéennes de Gastro-Entérologie. London, July 18-21, 1956. Basel and New York: S. Karger. 9½" x 6½", pp. 655, with illustrations.

The fifth meeting of L'Association des Sociétés Européennes et Méditerranéennes de Gastro-Entérologie (International Congress of Gastroenterology) was held in London from July 18 to 21, 1956, under the presidency of Dr. Thomas Hunt, President of the British Society of Gastroenterology. The proceedings of the congress have been published in an attractive volume, edited by Harold Edwards. The scientific programme covered a great deal of ground. Like *Omnia Gallia*, it was divided into three parts, as follows: Part I: (i) "Non-malignant Conditions of the Oesophagus"; (ii) "Premalignant Conditions of the Alimentary Tract". Part II: (i) Short papers; (ii) Papers read by title. Part III: "Ulcerative Colitis." The congress was trilingual, and the papers are published in the languages in which they were delivered (English, French or Spanish). We find the type face used particularly clear and attractive, and the illustrations are beautifully produced. This book of "proceedings" can be recommended to all whose special interest is gastro-enterology.

Munro Kerr's Operative Obstetrics. Sixth Edition. By J. Chassar Moir, Hon.L.L.D. (Queen's University, Ontario), M.A., M.D., F.R.C.S. (Ed.), F.R.C.O.G.; 1950. London: Baillière, Tindall and Cox, Limited. 10" x 6½", pp. 1018, with many illustrations. Price: 105s.

OWING to the retirement of Professor Munro Kerr, the sixth edition of his "Operative Obstetrics" is published under the authorship of J. Chassar Moir, who shared in the preparation of the previous edition. However, it remains "Munro Kerr's Operative Obstetrics", and it still maintains its place as one of the most outstanding works in practical obstetrics today. It is not a text-book for students, but, as may be inferred from its title, it is essentially a treatise on the problems of dystocia. The author has not allowed himself to be unduly bound by traditional teaching. His decisions are drawn from his vast experience and are personal and fearless, as is shown by the following: "Students are constantly warned against applying forceps in a secondary inertia because of the danger of post partum hæmorrhage. I have long doubted the truth of this contention." This may be heresy; but the subsequent reasoning is sound. A method of differentiating between normal and ectopic pregnancy by the injection of a radioopaque solution via the femoral artery is described, so that the book is indeed quite up to date. It is well illustrated, and some of the illustrations are in colour. Twelve of the latter depict the successive steps in lower segment Cæsarean section. The post-graduate student and the practitioner in obstetrics will find this an excellent book both for study and for reference.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"An Atlas of Muscle Pathology in Neuromuscular Diseases", by J. Godwin Greenfield, M.D., G. Milton Shy, M.D., Ellsworth C. Alvord, Jr., M.D., and Leonard Berg, M.D.; 1957. Edinburgh and London: E. and S. Livingstone, Limited. 9½" x 6½", pp. 116, with 12 illustrations. Price: 45s.

The result of a histological study of 121 cases of muscle disease.

"Chemical Composition of South Pacific Foods: An Annotated Bibliography", South Pacific Commission Technical Paper No. 100, by F. E. Peters; 1957. Noumea: South Pacific Commission. 10" x 8", pp. 112. Price: 6s. sterling.

Literature assembled and collated in the course of studies of nutritional problems.

"Medicine for Nurses", by M. Toohey, M.D., M.R.C.P., D.C.H.; Third Edition; 1957. Edinburgh and London: E. and S. Livingstone, Limited. 8½" x 5½", pp. 664, with 182 illustrations. Price: 30s.

The text has been brought up to date especially in relation to treatment.

"Doctor on the Dole", by Michael John; 1957. London: Christopher Johnson. 8½" x 5½", pp. 200. Price: 15s. The autobiography of a doctor.

"Essentials of Fluid Balance", by D. A. Black, M.D., F.R.C.P.; 1957. Oxford: Blackwell Scientific Publications. 8½" x 5½", pp. 142, with six illustrations. Price: 18s. 6d.

The author has aimed at brevity, clarity and appeal to the general medical reader, including undergraduates.

"Il Kwashiorkor", by A. Bendandi and C. Bellucco; 1957. Pisa: Edizioni "Omnia Medica". 9½" x 6½", pp. 220, with 42 illustrations. Price: L. 2000.

The text is entirely in Italian.

"Diseases of the Nose, Throat and Ear", by Howard Charles Ballenger, M.D., F.A.C.S., and John Jacob Ballenger, B.S., M.S., M.D.; Tenth Edition; 1957. Philadelphia: Lea and Febiger. Sydney: Angus and Robertson, Limited. 9½" x 6", pp. 668, with 550 illustrations and 11 plates. Price: £9 12s. 6d.

Revised and partly rewritten since the previous edition of 1947.

"Lupus Nephritis", by Robert C. Muehrcke, M.S., M.D., Robert M. Kark, F.R.C.P., F.A.C.P., Conrad L. Pirani, M.D., and Victor E. Pollack, M.B., M.R.C.P.E.; 1957. Baltimore: The Williams and Wilkins Company. Sydney: Angus and Robertson, Limited. 10" x 6½", pp. 150, with 43 illustrations. Price: 33s.

Describes the involvement of the kidney in systemic lupus erythematosus.

"Study Group on Atherosclerosis and Ischaemic Heart Disease", World Health Organization Technical Report Series No. 117; 1957. Geneva: World Health Organization. 9½" x 6½", pp. 40. Price: 1s. 9d.

Contains the collective views of an international group of experts.

"Clinical Cardiopulmonary Physiology", sponsored by the American College of Chest Physicians; 1957. New York and London: Grune and Stratton. 10" x 6½", pp. 768, with many illustrations. Price: \$15.75.

"A volume of applied physiology which reveals the present thinking and practice of experts in the field of diseases of the chest."

"Clinical Toxicology of Commercial Products: Acute Poisoning (Home and Farm)", by Marion N. Gleason, Robert E. Gosselin, M.D., Ph.D., and Harold C. Hodge, Ph.D., D.Sc.; 1957. Baltimore: The Williams and Wilkins Company. Sydney: Angus and Robertson, Limited. 10" x 6½", pp. 1176. Price: £8 16s.

A reference volume, containing details of poisonous commercial products and recommendations for treatment in cases of poisoning.

The Medical Journal of Australia

SATURDAY, AUGUST 10, 1957.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

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THE WELLCOME TRUST: THE FIRST TWENTY YEARS.

SIR HENRY WELLCOME died in 1936, having completed eighty-three years of vigorous living and having amassed great wealth. His life story, from his birth in a log cabin in Wisconsin, United States of America, in 1853, to his last years, during which he was knighted as "a generous supporter of medical research", was outlined in a leading article in this journal on August 22, 1953. The story would provide rich material for a number of novels. Scarcely less interesting have been the activities of the trustees appointed in the will of this remarkable man, as we find them set out in the first report of the Wellcome Trust covering the period from 1937 to 1956. Wellcome desired that there should be five trustees; two were to be well qualified in medicine and the allied sciences, and two were to have wide practical business experience, with special legal ability in one case and experience in the management of large estates in the other. The chairman, Sir Henry Dale, and two of the trustees have acted through the whole period of twenty years, and quite an exacting twenty years it has been, according to this first report, which has just been issued.

Like many another important will, Sir Henry Wellcome's will was not free from ambiguity and could not be expected to have provided for all subsequent developments. From the nature of its provisions and the magnitude of the funds left to be administered, the trustees were given a tremendous responsibility. That they have achieved so much, with a constant loyalty to what they have believed was the spirit of Wellcome's provisions, must evoke our

respect and admiration. Wellcome had, in 1924, registered a limited liability company, "The Wellcome Foundation Limited", with a theoretical capital of one million pounds in one-pound shares, all held by himself. This included not only the parent firm of Burroughs Wellcome and Company of London, with all its subsidiary companies and branches elsewhere, but also all the laboratories, museums and libraries which Wellcome had founded and supported; these many activities and institutions thus came to be supported from the pharmaceutical business. With the continued expansion of the business, however, it became evident that, when adequate provision had been made for generous maintenance and development of all the activities which Wellcome had incorporated with it, and when the trustees, to whom he intended to bequeath all its shares, had further provided from their dividends for the fulfilment of any personal and specific bequests which he might decide to make, they ought still to have at their disposal a substantial residue of income. In Wellcome's will the objects for which the trustees were to use these funds were arranged under two headings:

1. . . . the advancement of research work bearing upon medicine surgery chemistry physiology bacteriology therapeutics materia medica pharmacy and allied subjects and any subject or subjects which have or at any time may develop an importance for scientific research which may conduce to the improvement of the physical conditions of mankind and in particular for the discovery invention and improvement of medicinal agents and methods for the prevention and cure of disorders and the control or extermination of insect and other pests which afflict human beings and animal and plant life in tropical and other regions and elsewhere. . . .

2. . . . the establishment and endowment and future maintenance of any new Research Museum or Library and for the purchase and acquisition of books manuscripts documents pictures and other works of art and other objects and things for such Research Museums and Libraries and for conducting researches and collecting information connected with the history of medicine surgery chemistry bacteriology pharmacy and allied sciences. . . .

As the trustees' report points out, the objects thus defined by Wellcome's will for charitable promotion and support by the trustees were not notably different, in their general aims, from those which Wellcome had long been supporting within the structure of his business, and for which he was also concerned to ensure continued support in that association; and from this some confusion has from time to time arisen, to the inconvenience of both the Trust and the Foundation. However, the will contained a clause designed to nullify any legal risk of such ambiguity, and the charitable status of the principal part of the Trust has since been confirmed by a High Court judgement.

One of the problems that faced the trustees at first was the absence of a Board of Directors in any normal sense. However, they were eventually able to rectify this and to achieve their desired aim of restricting their own functions in relation to the business to those which they had always regarded as proper to their position as shareholders. This was accomplished only with considerable difficulty, especially during the war years from 1939 to 1945; not the least of their troubles being the complete destruction, in one night of air attack in January, 1941, of the whole of the offices at Snow Hill Buildings in the City of London, where the central administrative and office staff of Burroughs Wellcome and Company had been

entirely accommodated since 1883. Another problem was the payment of Estate Duty, for which Wellcome had made no adequate provision; we are not told the sum which had to be paid, but it must have been large. However, these and other hurdles were successfully surmounted.

Apart from the personal bequests in Wellcome's will there was a special bequest designed to provide for the erection of a permanent memorial to his parents in Garden City, Minnesota, where he had grown up. Various circumstances, including the fact that Garden City had not developed in the way that Wellcome had obviously assumed, made it inexpedient and in part impossible to carry out the precise provisions of the will; but after careful investigation and thought, a plan finally emerged, "according to which it is hoped that the directions of the Wellcome Will can be carried out in a manner really beneficial to the Garden City community as it has developed". Another major enterprise to which attention has had to be given was the activity in the field of archaeology in which Wellcome had interested himself. This work has all been brought to a satisfactory conclusion, but the trustees announce that they have no authority to give support to further enterprises in this field.

Faced with the tremendous scope of research in the general fields of medicine and the related sciences, as set out in Wellcome's will, the trustees decided to give priority to the promotion and support of research in the fields of pharmacy and pharmacology, veterinary medicine and tropical medicine. This has included taking over the ownership and full responsibility for the maintenance of malaria research laboratories at Thessaloniki in Greece, under Dr. Henry Foy. These were then named "The Wellcome Trust Research Laboratory, Thessaloniki". Subsequently it became desirable to move Dr. Foy and his unit to Nairobi in East Africa. Another important action of the trustees was the provision of a grant in 1942, during one of the most strenuous and critical periods of the war, which enabled the Medical Research Council to set up the plant to provide stable dried plasma and serum in adequate quantities. At a relatively early stage of their activities the trustees also provided endowments which enabled Wellcome Professorships of Clinical Tropical Medicine and of Pharmacology to be established, both of them in the University of London. Further substantial grants have helped important developments in veterinary medicine, pharmacy, biochemistry, anaesthesiology and other fields. Much has been done to foster research museums and libraries, notably at the Royal College of Surgeons and the Royal Society of Medicine, and in accordance with Wellcome's interest in the subject particular attention has been paid to fostering work on the history of medicine. Finally, mention may be made of the Wellcome Research Travel Grants, established in 1955; these provide for travelling expenses and certain other incidentals only and consist of short-term grants, for established research workers, and long-term grants, for approved workers going abroad to take up research fellowships or other temporary research appointments for a year or more.

A classified list of grants is set out in the trustees' report for those interested. It is enough to note here that in these first twenty years the trustees have allocated

£739,788 for medical and veterinary research, £313,883 for medical research museums and libraries, £64,053 for research in the history of medicine, £48,335 for archaeological enterprises and £4105 for Wellcome Medals and Prizes. The total benefactions for the period (including funds committed though not yet expended) amount to £1,170,164.

The Wellcome Trust shares with the Carlsberg Foundation in Denmark the interesting distinction of having at its disposal the entire distributable income of a large business enterprise. The Carlsberg Foundation, of which the directors are appointed by the Royal Danish Academy, receives the entire distributable profits of the famous Carlsberg Breweries, and expends these in the promotion of science and art. The Wellcome Trust holds all the share capital in the Wellcome Foundation Limited and uses the dividends from this great pharmaceutical undertaking in the way that we have indicated. The trustees make it clear in this their first report that, in making grants in accordance with the terms of their trust, their policy has so far been one of opportunism. They have, in general, aimed at giving support to enterprises of which the merits were endorsed by the best available scientific opinion, but which, for one reason or another, had not so far received the support which they needed. The trustees express the belief that they can most usefully perform their function by developing their programme essentially on opportunist lines. Thus, while continuing to give some preference to subjects, such as tropical medicine, pharmacology, pharmacy, therapeutics and veterinary medicine, in which Sir Henry Wellcome himself showed a lively interest, they will endeavour, both in these and in other fields, to identify and fill important gaps in the existing facilities for promoting and assisting research, rather than merely to duplicate the activities of other grant-making bodies. In this regard they recognize clearly the importance of working in friendly association with such bodies, whether charitable or governmental, "in a manner complementary rather than competitive". They believe that it is by such a policy as we have set down here that they can most effectively assist the growth of scientific knowledge in the many different areas of research activity which Sir Henry Wellcome had the foresight to define.

Current Comment.

FOUR PIONEER AMERICAN GYNÆCOLOGISTS.

ABOUT the beginning of the nineteenth century many young medical graduates in the United States of America began to feel some diffidence in regard to the education and training given at their own schools, so that the habit was acquired of visiting progressive centres in Scotland and France for post-graduate study. In the second half of the century the medical profession had gained much from experiences abroad, and was soon to lead the world in many important developments. In his interesting book on the early history of the Woman's Hospital in New York Dr. James Pratt Marr,¹ a member of the present

¹"Pioneer Surgeons of the Woman's Hospital: The Lives of Sims, Emmet, Peaslee, and Thomas", by James Pratt Marr, M.D.; 1957. Philadelphia: F. A. Davis Company. Sydney: Angus and Robertson, Limited. 9" x 6", pp. 160, with illustrations. Price: 60s. 6d.

staff, convincingly assures us that the specialty of gynaecology had its origins in the wards of that hospital when it was founded by Dr. James Marion Sims in 1855. Marr has chosen an effective method of presentation, to afford a clear exposition of the original ideas and experiments leading to the development of new surgical techniques, by giving a detailed biography of each of the four outstanding surgeons who worked at the hospital for varying periods throughout the second half of the century. They were James Marion Sims, for whose services the hospital was actually established, Thomas Addis Emmet, who succeeded him as surgeon-in-chief and continued to expand the new specialty of gynaecology for nearly fifty years, Edmund Randolph Peaslee, who had a flair for ovariectomy, and Theodore Gaillard Thomas, who retired from the active staff in 1887, but continued to practise and to teach the newer generation of gynaecologists until 1900.

The best known of the four is, of course, Marion Sims. Born and bred in South Carolina, he obtained his medical diploma at Charleston, and later spent twelve months of further study at the Jefferson Medical College in Philadelphia before experiencing the disappointments and hardships of general practice in the small country town of Lancaster, and then at Montgomery in Alabama, where he began his painstaking experiments in the surgical treatment of vesico-vaginal fistula. After placing his patient in a left lateral prone position on the kitchen table, and using a bent pewter spoon as a speculum, he was the first to obtain a clear view of the lesion which meant a life of untold misery to a great many unfortunate women; and then, after many attempts to repair the damaged tissues with his silver-wire sutures, he succeeded in effecting a complete cure for this distressing condition.

The story of these four ingenious, venturesome and progressive surgeons, in whatever capacity they happened to be studying, teaching or working at the new specialty, never ceases to be interesting and instructive. As loyal Southerners and tacit supporters of the Confederate cause, a difficult position was created for three of them as prominent citizens of an Abolitionist State while the Civil War continued to foster bitter animosities and suspicions throughout the whole country. With the outbreak of hostilities in 1861, Sims resigned his hospital appointment and took his family overseas to gain an international reputation in Great Britain and the Continent for his plastic repair work on the female genital passages. When he finally returned to New York in 1872, the lady supervisors of the new and larger Woman's Hospital failed to be impressed by his forthright manner and foreign decorations; so that he had to be content to serve on an equal footing with his pupil, Thomas Emmet, and with Peaslee and Thomas, who had just been promoted to the full surgical staff. All four surgeons worked amicably together; Sims and Emmet specialized in plastic and reconstructive surgery, taking every opportunity to enlighten the medical profession on the disastrous consequences of muddled and meddlesome midwifery, while Peaslee and Thomas concentrated on the new field of abdominal surgery opened up by the introduction of general anaesthesia and antisepsis.

The book is helpfully illustrated by a series of pictures, portraits and reproductions of Emmet's drawings to explain new operative procedures for cervical, vaginal and perineal repair. It is likely to meet with approval as a distinguished contribution to the history of gynaecology.

ACUTE MYOCARDIAL INFARCTION.

It has been said that statistics can prove anything. This quip applies to some extent in connexion with the treatment of acute myocardial infarction. The older physicians were not aware of the staggering death rate and the multiple complications which some modern statistics allege to have been associated with acute myocardial infarction. Many older physicians were under the impression that a very considerable percentage of their patients with acute myocardial infarction got well without

a great number of thrombo-embolic phenomena. Especially in private practice, where the patient was closely watched by the physician himself, was this the case. A large percentage of these patients appeared to get well and remained well for years. Statistics since then are said to show that a large proportion of these patients died, or suffered from numerous thrombo-embolic phenomena in hospital practice. These statistics have been largely obtained in America. As a result of the supposed dread nature of acute myocardial infarction, anticoagulants such as dicoumarol and heparin were used very freely, and statistics were published showing that the mortality rate in patients treated with anticoagulants was very much less than in those not so treated.

It is interesting, therefore, to note the reports of two series of cases of acute myocardial infarction in the same journal. I. S. Wright¹ records that anticoagulants reduced the death rate by one-third to one-half. He advises administration of 1200 to 1500 milligrammes of ethyl biscoumacetate and 200 to 300 milligrammes of bishydroxycoumarin at once by mouth, and thereafter 25 to 50 milligrammes of bishydroxycoumarin in daily doses to maintain the prothrombin time between 22 and 35 seconds by the Quick method. Heparin given subcutaneously, in a dosage of 75 milligrammes twelve-hourly for two or three doses in some cases, is advocated at the onset. The effects of the anticoagulants can be overcome by giving vitamin K₁ orally if necessary. In other words, if the treatment causes bleeding, as it not infrequently does, the ill effect of the first treatment can be overcome by another form of treatment. Wright states that mural thrombi were found in 62% of 48 patients not treated with anticoagulants, in contrast to 31% of 41 patients so treated. The same contrasts were reported with cerebral and pulmonary emboli. Wright quotes the World Congress on Blood Coagulation in Basle in 1954 as agreeing unanimously that unless contraindications existed, all patients should receive anticoagulant therapy. He discusses selection of patients and newer drugs, but is a strong advocate of anticoagulants. This is one side of the picture.

On the other hand, H. I. Russek and B. L. Zohman in the same journal² discuss the limited use of anticoagulants in the management of acute myocardial infarction. They divide the patients into "good risks" and "poor risks". The "good risks" are those who have never had a previous infarction, and who do not have intractable pain, extreme or persistent shock, significant cardiac enlargement, gallop rhythm, congestive heart failure, auricular flutter or fibrillation, ventricular tachycardia or intraventricular block, diabetic acidosis or other states conducive to thrombosis. Russek and Zohman analyse 1000 cases. In this report they record the results in 511 "good risk" patients who did not receive anticoagulant therapy. They observed thrombo-embolic phenomena of a mild nature in 3.7% of these patients, among whom there were only 18 deaths, a mortality rate of 3.5%. Russek and Zohman believe that anticoagulant therapy, which has certain hazards, is neither necessary nor desirable for patients who have been classified as "good risks" by the above criteria. By way of comment it may be said that few physicians would regard subcutaneous injection of heparin as a satisfactory method of reducing liability to thrombo-embolic phenomena. Subcutaneous and intramuscular injections of heparin are more effective in producing haemorrhage at the site of injection than in reducing the coagulation time of the blood. Furthermore there is considerable doubt as to the reliability of some methods of testing for blood coagulation time. Other statistics do not reveal a high proportion of mural thrombi in patients dead of acute myocardial infarction.

It will be seen that there are two sides to the question of anticoagulant treatment of acute myocardial infarction. There is one good point about both these papers—the authors do not allude to coronary thrombosis, a diagnosis which has been made much too frequently in the past since

¹ J.A.M.A., 1957, 163: 918 (March 16).

² J.A.M.A., 1957, 163: 922 (March 16).

Wright Smith, of Melbourne, showed, as others have shown since, that 90% of cases of acute myocardial infarction are due to coronary occlusion without visible evidence of thrombosis. Acute myocardial infarction is a much more satisfactory diagnosis.

SERUM TRANSAMINASE ESTIMATIONS IN MYOCARDIAL INFARCTION.

LARGELY owing to the work of J. S. LaDue and his colleagues, the estimation of the enzyme glutamic oxalacetic aminophosphatase (transaminase) in serum is receiving much attention as an aid to the diagnosis of acute myocardial infarction. Normal levels are more than doubled within the first day after infarction; abnormal levels may also be encountered in conditions involving muscles, kidneys or liver, but these conditions are not as a rule a source of confusion. S. Krause and his associates¹ have recently reviewed their experience of the test, and the circumstances in which they found it helpful are readily summarized.

Three sets of circumstances, none of them unexpected, may be defined. The first is in the differentiation of myocardial infarction from acute pericarditis. The second is in the differentiation of acute pulmonary lesions, notably embolism, from myocardial infarction. Most clinicians will have encountered patients with these conditions in whom the clinical, electrocardiographic and radiological findings were inconclusive in the first twenty-four hours. The third set of circumstances arises when patients with an appropriate clinical history show no conclusive electrocardiographic evidence of infarction. A minority of electrocardiograms after infarction will be normal at the time of the patient's admission to hospital, but will subsequently show characteristic changes. More important are those patients whose electrocardiograms show a left bundle branch block, arrhythmia with a rapid rate, digitalis effect or changes which are compatible with either old or recent infarction. In any of these situations immediate electrocardiographic confirmation of a clinical diagnosis of myocardial infarction may be difficult or impossible, and yet of great significance in management. Krause and his colleagues believe that failure of the transaminase level to rise on serial determinations in the first three days excludes myocardial infarction.

The number of occasions when this test will be urgently and specifically required is probably not great relative to the frequency with which cardiac infarcts occur. However, if it fulfils the claims made for it by several investigators, it will prove extremely helpful in some difficult situations.

INFLUENZA: THE WORLD PICTURE.

A RECENT COMMUNICATION from the World Health Organization, based on information received up to July 11, indicates no further extension of influenza epidemics in Asia. In Europe considerable interest has been aroused among epidemiologists by the fact that the Asian virus has gained foothold in several localities of the Netherlands, but is not spreading rapidly. In the United States of America a certain number of local outbreaks are being investigated, and an influenza virus resembling the Asian strain has been isolated from members of the crew of naval vessels in San Diego and Norfolk (Virginia). A strain of virus from a case in Cleveland, Ohio, has been identified as the Asian type. In Asia, the epidemics are dying down in Burma, Japan, Laos, New Guinea, North Borneo and Sarawak. In Saudi Arabia, an estimated 5% of Mecca pilgrims have caught influenza, but the incidence is decreasing. In Iran, influenza cases are reported from army barracks in Teheran and Khusistan. The infection is also reported throughout Korea.

¹ *Dis. Chest*, 1937, 31: 512 (May).

Generally speaking, the disease continues to be mild, with few complications or deaths. Reports received from the Netherlands show that, although a high percentage of schoolgirls in two boarding establishments are affected, and there are a certain number of scattered foci of infection in several towns, the disease is not spreading rapidly. The Netherlands public health authorities indicate that only some scattered mild cases are noted, as is frequently the case in summer. The general health of the population in the Netherlands is not in the least disturbed, and life there continues completely normally. There seems no reason to expect that the infection will be any less mild in Australia. If it reaches epidemic proportions here, as it may well do, it will be a nuisance to the community; but by itself it offers no serious threat to the life or well-being of the individual.

RICKETS RESISTANT TO VITAMIN D.

RICKETS resistant to vitamin D was first described by Albright, Butler and Bloomberg in 1937, and since then the familial character of the condition has been mentioned by several authors, but no detailed examination of this aspect has been undertaken. F. N. Mitchell and J. E. Mitchell¹ have described a new case in detail and followed the family history of the patient, in which five generations have been affected. The patient was an eleven-year-old white girl, who showed bowing of the legs at thirteen months of age. This progressed steadily in spite of dosing with cod liver oil and recently with vitamins A and D. A very thorough medical examination showed no abnormalities beyond the marked bowing of the legs and the widening of the distal ends of the ulnae and radii. The values for blood calcium and blood phosphorus content varied considerably from day to day with low serum phosphorus values. Daily administration of 300,000 units of vitamin D was followed by early healing of the rachitic process as shown by X-ray examinations. Thirty-seven related members of the family were considered. Ten of these were examined in detail; five showed the disease, five did not. Ten other persons, not seen by the authors, had histories very strongly suggestive of the condition, but pictures were available of three of these which showed moderate or severe rickets. Of the 37 members of the family 17 were affected. In every generation but the fifth there were members of both sexes affected. In the first generation considered, the father was affected, and in the second generation the two children, both females, were affected. It is postulated by the authors, on the basis of the pedigree, that this disease is the result of a single dominant autosomal gene of variable expressiveness. There are good pictures of seven subjects. No suggestion is made as to how the aberrant gene acts in the production of the condition.

OBESITY AND HYPERTENSION AMONG YOUNG ADULTS.

It has long been recognized that among older people there is some relation between overweight and hypertension. N. Szent-Györgyi² has studied the relation of obesity to hypertension in young college students in the University of Chicago. Three thousand five hundred and eight students were examined, all in apparent good health. Blood pressure was considered elevated if it was 140/90 millimetres of mercury or above. To determine the "normal" weight Broca's formula was used, i.e., normal weight in kilograms equals the number of centimetres of the height above 100 millimetres. This gives figures in good correspondence with standard tables. According to the criteria mentioned there were 236 hypertensive and 979 obese subjects in the 3508 students, or 6.7% and 27.9% respectively. Among the hypertensives 47% were obese. Among the normotensives 26.5% were obese. Only 4.9% of the non-obese students were hypertensive, but among

¹ *Am. J. Dis. Child.*, April, 1957.

² *Am. J. Clin. Nutrition*, 1957, 5: 274 (May-June).

the obese there were 11.3% hypertensive. The distribution of obesity according to age groups was approximately the same among the normotensive and hypertensive students. An interesting point was that obesity seemed to increase among the foreign-born students with increasing number of years spent in the United States, no doubt because of a change in eating habits.

The importance of obesity and hypertension, their influence on degenerative diseases, and their effect on longevity have been emphasized by many authors. Szent-Györgyi quotes with approval a remark of Rynearson and Gastineau: "It is easy to shrug off 'a few pounds over weight' as something of little consequence, but in so doing, the physician is ignoring what is perhaps his best chance to lengthen the life and diminish the future illness of his patient."

RUNNING SPEED AND CORPUSCLE COUNT.

SPORTING CIRCLES in America were startled last year when an article by H. C. Brenon appeared,¹ proclaiming that the erythrocyte count in horses could be taken as a certain indication of racing form. Briefly the view expounded was this. The average number of red cells per cubic millimetre of blood averages in the horse 6,800,000; but the figure is remarkably variable, and counts up to 10,000,000 and over have been obtained. Neither age nor sex makes any difference, but increase in the figure is found with effort and with excitement. Examination of some 200 horses showed that if the erythrocyte count fell below 6,300,000, some animals looked off colour; some appeared to be in vigorous health, but one thing was certain—the horses would make a poor showing in a race. On the other hand, horses with ten to thirteen millions of red corpuscles per cubic millimetre of blood, whatever their appearance, were certain to run well and usually gained high places. It was made clear that the increased count of erythrocytes was not a general but a peripheral manifestation in the equine blood.

More recently, in a sprightly article, A. Ravina² has declared that this contention may not be proven, but that it is highly desirable that it should be put to the test. Ravina facetiously points out that racing tips will now take on another form, and that many "who dunnits" (*romans policiers*) in Britain and America will now change their pattern; no doubt the correlation between racing form and electrocardiograms pointed out by J. D. Steel³ will also come into the picture. Human red cell counts are not so labile as in the horse, but possibly there may be some correlation between these and track speed.

DOES POLITICAL TURMOIL PRODUCE MENTAL DISORDER?

In November, 1954, Algiers went through a period of extreme political upheaval. Anxiety and fear and the nearness of danger and death oppressed the inhabitants, and this month has been looked back upon as a veritable reign of terror. M. Maurice Porot, an Algerian psychiatrist, has studied the question whether this period of mental stress produced mental disorder. The results of his careful inquiry can be read in *La Presse médicale* of April 27, 1957. Rather to his astonishment, Porot found that no such psychic sequelae could be detected; indeed there was some evidence that there had been a decline. In a few rare cases he was convinced that this political agitation was the actual cause of mental disorder; in a considerably greater number there had been already predisposing conditions, whilst in a still greater collection of clinical material he was certain that the month of political upset was eagerly seized upon as the reputed source of

psychic aberration already existing. Porot has searched literature and history and has discovered that his conclusions are not new. The Reign of Terror in the French Revolution had no effect on national mental health; the siege of Paris was equally inert; in the two global wars the (French) psychiatric clinics remained half-empty. As evidence for the reverse opinion he mentions that in Germany, Italy and Russia the rise of authoritarian power was characterized by absence of hysteria and a fall in the suicide rate. "Nothing runs round the world so quickly as a false conclusion", said Legrand du Saulle, and this aphorism Porot quotes with approval. The article is not provocative or challenging, but a calm factual analysis.

PHLEGMONOUS GASTRITIS.

THE condition known variously as phlegmonous gastritis, suppurative gastritis or gastric abscess, which is essentially a bacterial infection of the stomach wall, is fortunately rare. In a recent review of phlegmonous gastritis, stimulated no doubt by their experience in the successful management of two cases, A. Starr and J. Wilson¹ point out that the infecting organism is the haemolytic streptococcus in the majority of instances; in other cases pneumococci, staphylococci, *Proteus vulgaris*, *Escherichia coli* and *Clostridium welchii* have been found responsible. They go on to state that phlegmonous gastritis may occur as a complication of chronic ulcer, gastritis, gastric carcinoma or surgical operation on the stomach. It has also been reported as following the acute infections and in association with furunculosis. There is diffuse or sometimes localized inflammation of the stomach wall, which is thick and indurated. When it is diffuse, the lesion does not go beyond the cardia or pylorus. When it is localized, it may present as a mass in the gastric wall, in which inflammation is not readily apparent unless abscess formation occurs. The stomach may perforate, and the wall is coated with fibrin and adherent to other organs. Microscopic examination reveals extensive infiltration of the submucosa with polymorphs and scattered areas of necrosis, thrombosis and haemorrhage. The muscle layers show infiltration with inflammatory cells and granulation tissue.

Phlegmonous gastritis may follow a rapidly fulminating course, with sudden onset, severe toxæmia, early peripheral circulatory collapse and death within a few hours. However, the more usual picture is that of an acute upper abdominal inflammatory process with high fever, abdominal pain, nausea and vomiting. Rarely is gross pus found in the vomitus. The pain is usually most severe in the epigastrium, and it does not radiate. Examination reveals tenderness and muscle-guarding localized to the epigastrium, or the physical findings of generalized peritonitis. If X-ray examinations of the gastro-intestinal tract are performed, they show absence of mucosal folds and marked atony of the stomach. When, as sometimes happens, the disease follows a more chronic course, after localization of a circumscribed abscess, the patient may be afebrile, complaining only of mild epigastric pain and anorexia. In this case the picture may closely mimic an obstructing ulcer or gastric carcinoma, both before and during operation.

Starr and Wilson report two cases in which they performed subtotal gastrectomy with success. They have also studied the relevant literature, and conclude that the performance of subtotal gastrectomy appears to be safe and feasible in the chronic form of the disease. Moreover, they hold that in the acute form of the disease, subtotal gastrectomy or drainage procedures (when abscess is present) may also significantly reduce the mortality in this group. This has not been the universal experience, but it will be interesting to note the cumulative results, as individual instances of this rather rare condition are subjected to modern surgical and anti-bacterial measures.

¹ J. Vet. Med. Assoc., April 1, 1956.

² Presse méd., March 30, 1957.

³ M. J. AUSTRALIA, January 19, 1957.

¹ Ann. Surg., 1957, 145: 88 (January).

Abstracts from Medical Literature.

CORRIGENDUM.

Biopsy of the Breast followed by Delayed Radical Mastectomy.

An error appeared in line 28 of the abstract of an article by E. Pierce, O. Clagett, J. McDonald and R. Gage (*Surg., Gynec. & Obst.*, November, 1956) in the issue of May 25, 1957, page 735. The word "excisional" should be "incisional"; so that the last sentence but one in the abstract should read: "The significant point in this study is that the five-year survival rate is only 47.5% for the patients who had incisional biopsy." We regret this error.

GYNÆCOLOGY AND OBSTETRICS.

Retained Placental Tissue and Post-partum Haemorrhage.

W. M. LESTER (*Am. J. Obst. & Gynec.*, December, 1956) reports on 85 cases of retained placental tissue among 9732 vaginal deliveries in the last trimester. Two factors seemed involved in the origin of the retained placental tissue: first, abnormalities of the placenta such as succenturiate lobes or partial placenta accreta, and secondly, abnormalities in the third stage of labour, in particular undue force in expelling the placenta. In 4.8% of cases retained fragments were a cause of immediate post-partum haemorrhage. In the late puerperium, however, they account for 44.4% of cases. Early exploration of the uterus and curettage in all cases of gross late puerperal haemorrhage seem advisable, and any abnormality in the third stage of labour or defect in the secundines should be an indication for exploration. When it is impossible to remove densely adherent placental fragments, uterine tamponade is recommended to control bleeding.

Ætiology of Habitual Abortion.

W. H. MASTERS, L. W. MAZE AND T. W. KILPATRICK (*Am. J. Obst. & Gynec.*, May, 1957) evaluate 29 cases of multiple abortion in their infertility clinic. Nineteen of these were primary abortions and 10 secondary. A definitive diagnosis of endometrial fibrosis was established in 17 of the 29 cases, and in five cases a didelphic uterus was demonstrated. Endometrial fibrosis is suspected from a history of post-partum or post-abortion infection, often with a change of menstrual pattern. Biopsy of the endometrium shows a fibrous content in excess of normal, no late luteal stromal oedema, and compression of the endometrial glands, whose secretory activity is much depressed. Lymphocytic infiltration, always present in the lesser developed cases, may be absent, and there is a marked degree of avascularity of the section. Therapeutic curettage in 17 cases produced a regenerated endometrium with reduced fibrosis in 10. Progesterone support is instituted about 48 hours

after ovulation and conception are presumed to have occurred; 10 to 25 milligrammes per 24-hour period in linguet form are given. From the thirty-fifth day of amenorrhoea, hydroxyprogesterone caproate, 125 milligrammes per day, is given intramuscularly through the fourth missed menstrual period, then biweekly to term. Threatened abortion is treated by admission of the patient to hospital and increased dosage of progesterone. The authors contend that the fetal abnormalities frequently associated with habitual abortion are secondary to poor physical support of, or inadequate nutrition at, the nidation site, rather than to failure of embryonic development.

Kyphoscoliosis and Pregnancy.

R. J. DUGAN AND M. E. BLACK (*Am. J. Obst. & Gynec.*, January, 1957) review the literature on kyphoscoliosis and pregnancy and discuss 22 further cases. These patients have long been regarded as skeletal cardiac and pulmonary cripples, but there is growing feeling that the primary incapacity is that of the lungs, which are unable to provide proper oxygenation. Vital capacity studies showed a marked diminution of this portion of lung volume—in one case down to 35% of normal. Morphine is contraindicated for this type of patient, as the return of blood to the heart is hampered by peripheral dilatation of blood vessels. Treatment should be directed towards prevention of over-exertion and fatigue, control of weight gain and sodium restriction in the diet. Pulmonary infection or evidence of cardiac failure requires treatment in hospital. There was only one maternal death from cardiac failure in the series.

A B O Incompatibility in the Newborn.

W. E. COPELAND, N. VORYS AND J. C. ULLERY (*Am. J. Obst. & Gynec.*, May, 1957) report 55 cases of hemolytic disease of the newborn from A B O incompatibility. The mechanism of this as a cause of hemolytic disease is similar to that which occurs in Rh iso-immunization. In a mother with group O, Rh-positive blood and an offspring with group A blood, the antigen of the fetus, inherited from the father, would enter the mother's circulation by the placenta and increase the maternal titre of anti-A agglutinin. In a group of 8914 live births there were 26 cases of A B O incompatibility (0.291%) and 55 cases of Rh incompatibility (0.618%). Hemolytic disease as a result of A B O incompatibility varies from 5% to 20% of all cases of hemolytic disease of the newborn. In establishing the diagnosis, maternal and fetal typing must be such that iso-immunization can occur. The maternal blood group was predominantly O, Rh-positive; of the fetal blood groups, 69% were A, Rh-positive and 31% were B, Rh-positive. The authors state that mothers of affected infants usually have incomplete anti-A or anti-B antibodies, but their occurrence has not the same significance as anti-Rh antibodies, which always signify potentially dangerous sensitization. The Coombs test may produce a negative or weakly positive result. The occurrence of A B O hemolytic disease in pregnancy cannot be

predicted even in a mother who has previously given birth to an infant with this disorder. Jaundice is an early significant clinical finding; it occurred in 25 of 26 cases in less than twenty-four hours, and in some cases was as pronounced as that seen in Rh disease. In most infants the disease is mild and requires no treatment. When it is moderately severe, a simple transfusion with group O packed red cells may be necessary, and exchange transfusion is reserved for the severe cases, and for premature infants, who are prone to develop kernicterus more readily. A serum bilirubin level over 20 milligrammes per 100 millilitres, an increase of serum bilirubin content of 0.5 to 1.0 milligramme per hour, or reticulocytosis of over 20% is considered an adequate indication for exchange transfusion. In a group of 26 affected babies, 14 were observed and had no further treatment, two had a simple transfusion, seven had one exchange transfusion, and three had two exchange transfusions. One premature infant died from aspiration pneumonia.

Premature Rupture of the Membranes.

J. I. BISKIND AND L. H. BISKIND (*Am. J. Obst. & Gynec.*, April, 1957) report a study of 100 consecutive cases of premature rupture of the membranes, at 37 weeks' gestation or less. These cases occurred among 2481 deliveries (4% incidence). Seventy-nine patients were multiparae and 21 were primigravidae. All patients were admitted to hospital immediately after rupture of the membranes and kept at rest in bed. In most instances patients were discharged in 48 to 72 hours if labour had not commenced. Antibiotics were given at the discretion of the obstetrician. Premature rupture of the membranes occurred in 50% of patients at or about the thirty-sixth to thirty-seventh week of gestation, and 75% of ruptures occurred within eight weeks of term. No apparent aetiological factor was evident in these cases, nor had age, race or presentation any significant influence. In only 16 cases was there any significant prenatal complication. Among the complications were preeclampsia, "spotting" of blood, severe anaemia and hypertension. The presentation was by the vertex in 82 cases and by the breech in 12 cases, and six patients underwent Caesarean section. Prolapse of the cord occurred in two cases. Thirty-nine patients of the series received antibiotics, either alone or in combination, and the only two patients who developed amnionitis had received antibiotics. Eleven patients had induction of labour by intramuscular or intravenous administration of "Pitocin", with no complications and successful labour. Fifty-eight patients commenced labour within 24 hours of rupture of their membranes. Twenty-three of this group noted the onset of labour within one hour of rupture. Sixty-nine patients were delivered within 48 hours of rupture of the membranes, and 79 were delivered within 72 hours. The authors conclude that labour and delivery will most likely occur within 72 hours after rupture of the membranes. Admission to hospital after this period is not justifiable unless there are other indications. Antibiotics do not play a

satisfactory role in the prevention of amnionitis, and proper perineal hygiene is probably of importance in the prevention of infection.

The Treatment of Preeclamptic Oedema with Acetazolesamide ("Diamox").

W. J. DIECKMANN, J. HARROD AND A. MONARDO (*Am. J. Obst. & Gynec.*, April, 1957) discuss the phenomenon of oedema and its treatment by diuretic drugs. Previous studies on the pharmacology and clinical effects of acetazolesamide ("Diamox") on the oedema of normal pregnancy and preeclamptic toxæmia are mentioned. Observations are made on 106 pregnant patients treated with "Diamox". All patients had more than the normal amount of visible oedema or had gained more than an average of one kilogram per week. The dosage of "Diamox" was 500 to 750 milligrammes, given every second or third day. The drug has a low toxicity, sensitization is rare, and prolonged daily administration caused no toxic effects on the fetus. The results of the administration of "Diamox" are detailed in selected cases of preeclampsia, hypertension and pregnancy with oedema undiagnosed. The authors conclude that "Diamox" is a relatively safe drug for producing weight loss by increasing urine output and urinary sodium excretion in pregnant patients with visible or occult oedema (abnormal weight gain), pseudo-preeclampsia, hypertensive disease and decompensated heart disease. "Diamox" has comparatively little effect on patients with true preeclampsia. The use of "Diamox" has some prognostic value, in that a marked loss of weight due to increased excretion of urine and of sodium suggests that the patient did not have preeclampsia, but had water and electrolyte retention due to some other condition, possibly the pregnancy itself, multiple pregnancy, anaemia or hypertensive disease.

"Pitocin"—1955.

L. M. HELLMAN, S. G. KOHL AND H. R. SCHRECHTER (*Am. J. Obst. & Gynec.*, March, 1957) report a mass statistical study of the uses and results of treatment by infusion of dilute "Pitocin" for the induction of labour, the acceleration of labour and the treatment of uterine dysfunction. The data are taken from "The Obstetrical Statistical Co-operative", a group of ten university hospitals with an agreed and uniform method of recording by trained personnel. In a series of 63,276 deliveries there was an overall incidence of 5656 "Pitocin" drip infusions (9%). The frequency of use of "Pitocin" infusion varied in different hospitals from 1% to 28%, and was directly correlated with the percentage of private patients in the hospitals. Most patients were treated with dilutions of one millilitre of "Pitocin" in 1000 to 1500 millilitres of a 5% solution of dextrose in water, administered at a rate of 20 to 50 drops per minute. There were 1123 inductions of labour by "Pitocin" infusion, of which only 13.6% were indicated, the remainder being elective. The perinatal mortality rate for infants after elective induction of

labour by "Pitocin" drip therapy was 1.3%. A marked increase in the perinatal mortality rate followed indicated inductions of labour, on account of the increased numbers of premature babies in the latter series. "Pitocin" infusion was used electively to accelerate labour in 3508 cases, and was used for reasons indicated in only 136 cases. The indication was almost entirely *abruptio placentæ*. Uterine dysfunction accounted for 889 "Pitocin" infusions, or 1.4% of the total deliveries. In this series, uterine dysfunction (primary and secondary uterine inertia) accounted for only 15.7% of the total number of "Pitocin" infusions, while acceleration of labour accounted for 64.5%, and induction of labour for 19.6%. The four broad principles of treatment of uterine dysfunction in the series were as follows: "Pitocin", "Pitocin" plus Caesarean section, Caesarean section, other treatment. Of patients with uterine dysfunction, 57% were treated with "Pitocin". Failure of the method and recourse to Caesarean section occurred in 5% of these cases. Private patients underwent Caesarean section after the failure of "Pitocin" therapy more than twice as frequently as public patients. The overall perinatal mortality rate in cases of uterine dysfunction was 3%. The authors conclude that prompt Caesarean section is indicated if "Pitocin" infusion fails to achieve progress in cases of uterine dysfunction. There were no maternal deaths among the 5656 patients treated by "Pitocin" infusion. In the series there was one case of ruptured uterus; the incidence of post-partum hemorrhage was 4.8%.

Tumours of the Broad Ligament.

G. H. GARDNER, R. R. GREENE AND B. PECKHAM (*Am. J. Obst. & Gynec.*, March, 1957) report a study of the embryonic development of broad ligament structures, the normal adult broad ligament and finally the abnormal broad ligament. Attention is drawn to the confusion existing concerning the terminology and classification of broad ligament structures. The study is based on serial sections from the broad ligaments of embryos and new-born infants and the broad ligaments of 598 patients, and on serial sections from the lateral half of 11 broad ligaments from adult women. The mesonephric (Wolfian) and paramesonephric (Müllerian) derivatives are described and their characteristic epithelial linings are illustrated. Accessory oviducts or accessory tubes are classified among the paramesonephric derivatives. The authors consider the identification of various epithelium-lined structures in the broad ligament, whether normal, cystic or tumorous, to be facilitated by the inclusion of a cross-section of uterine tube in the specimen. One hundred and one broad ligament cysts were studied and found to be distension phenomena and not neoplasms. These were classified according to mesonephric or paramesonephric origin on the basis of the lining epithelium. Other structures described in the normal broad ligament include the *rete ovarii*, medullary tubules, hilar or interstitial cells and accessory adrenals. The interstitial cells probably produce at least a portion of the androgen elaborated in every female. Accessory adrenals, apart

from the absence of a medulla, are counterparts of normal human adrenal glands. The usual mesonephric and paramesonephric cysts are not considered to be true tumours of the broad ligament. The authors state that most of the tumours of the broad ligament are small and of academic rather than clinical significance. The series comprised 27 tumours, including nine serous cystadenomata, five serous cystomata, five Brenner tumours and three myomata. The remaining five comprised a fibroadenoma, a granulosa-theca cell tumour, a rete adenoma, a paramesonephric adenoma and an adenocarcinoma. These tumours are briefly described. The authors consider that there are numerous epithelial structures in the broad ligament, made up of adult-type cells, from which tumours of epithelial type can be derived. There is also sufficient fibrous tissue and smooth muscle tissue to explain the origin of fibromata and fibroadenomata. They do not think it necessary to revert to the Cohnheim theory of embryonic rests to explain the presence of true tumours in the broad ligament.

SURGERY.

Carcinoma of the Extrahepatic Bile Ducts.

K. SAKO, G. SEITZINGER AND E. GARSIDE (*Surgery*, March, 1957) review the accessible world literature on carcinoma of the extrahepatic bile ducts, discuss 564 cases, and add six of their own. They find that the results of surgical treatment of extrahepatic bile duct cancer have been uniformly poor, the average survival period being 4.2 months. The surgery included various types of external drainages, shunts and anastomoses between the biliary tract and the gastro-intestinal tract performed as palliative procedures. Longer survival periods were obtained after radical procedures for tumours of the junction and the common duct; these procedures consisted of block resection of the involved portion of the duct and the reestablishment of biliary tract continuity.

Fatal Pseudomonas Septicæmias in Burned Patients.

K. MARKLEY, G. GURMENDI, P. CHAVEZ AND A. BAZAN (*Ann. Surg.*, February, 1957) demonstrate that *Pseudomonas aeruginosa* septicæmia was the major cause of death occurring after the initial forty-eight-hour post-burn period in a series of 172 children and 103 adults with burns involving 10% or more of the body surface. Clinically, Markley *et alii* found multiple characteristic vesicular or nodular cutaneous lesions in the non-burned areas in 78% of the burned children, with blood cultures yielding a growth of *Pseudomonas*. At autopsy, multiple hemorrhagic and necrotic lesions from which *P. aeruginosa* could be grown on culture were found in the viscera. They state that there was no effective antibiotic or chemotherapeutic agent which could have prevented the deaths of these patients.

Medical Practice.

AUSTIN HOSPITAL, HEIDELBERG: SPINAL INJURIES CENTRE.

THE following notes relating to the early care and transport of persons suffering from spinal injuries have been received from the Austin Hospital, Heidelberg, Victoria, and are published for the information of those interested.

First Aid.

1. Any person with a suspected fracture of the spine should be warned not to attempt movement.
2. (a) Provided there is no danger of further damage from road traffic etc., it is advised that the patient should not be moved until there are three or preferably five people available. All should then work together in unison to lift the patient slowly, horizontally, and "in one piece". (b) If it is necessary to move the patient single-handed, every endeavour must be made to prevent flexion or rotation of the spine, and dragging by the feet held close to the ground is the only safe method.
3. A number of spinal injuries are of the hyperextension type, particularly in the cervical region. Early radiological assessment of the lesion is essential. Until such assessment is made, the patient must be moved and transported in the position in which he is found, avoiding either extension or flexion. If the spinal injury is of the flexion type, a small soft pillow may be placed at, or slightly distal to, the site of the lesion. If there is no radiological evidence of a flexion injury, the spine should be maintained in a neutral position.
4. Remove all hard objects—e.g., keys—from the patient's pockets.
5. Determine and record the level of any cord lesion at the earliest possible time.

Early Hospital Care.

Management of Fractured Spine.

The patient is nursed on his back with pillows etc. to maintain mild hyperextension of the fractured spine where indicated. The patient is turned every two hours, day and night, from back to one side, to back, to the other side, to back etc. With fractures of the cervical part of the spine, great care must be taken to turn the head with the rest of the patient. The application of skull calipers is not essential, particularly in the early stages. Flexion injuries can be controlled and often reduced by postural means with the use of a pad of appropriate size placed just distal to the lesion, the upper cervical component being left unsupported.

Treatment of Shock.

Shock must be treated in the usual way, but the application of heat must be carried out with the greatest caution. Hot-water bottles are absolutely forbidden. All patients must be examined thoroughly to exclude associated skeletal or visceral injuries. Shock which does not respond, or improvement which is not maintained by usual resuscitation, may suggest visceral or other injuries requiring surgical intervention.

Management of the Bladder.

(a) It is safe to defer catheterization for at least 24 hours. Fluid intake should be restricted during this period. (b) During this time attempts should be made to empty the bladder by gentle suprapubic pressure combined with digital massage *per rectum*. (c) After 24 to 36 hours, if there is no voluntary or reflex function, the bladder should be emptied by urethral catheterization under the strictest aseptic conditions using a no-touch technique. Intermittent catheterization, using a Foley catheter no bigger than size 14 to 16 F., should be continued every eight to twelve hours.

Admission of Patients to the Spinal Injuries Centre.

Traumatic Paraplegia or Quadriplegia.

Patients with acute injuries will be admitted to the centre at any hour, day or night. It is desirable that admission be effected at the earliest possible time unless associated visceral or skeletal injuries render this inadvisable. Patients

with long-standing paraplegia will be admitted at the earliest convenience.

Paraplegia due to Disease.

Admission of patients with paraplegia due to non-progressive medical or surgical conditions, or to progressive disease, will be made on the understanding that such patients may be discharged or transferred should a period of observation reveal that treatment at the centre would be of no avail, or if it is considered impracticable.

Medical Societies.

THE MEDICAL SCIENCES CLUB OF SOUTH AUSTRALIA.

A MEETING of the Medical Sciences Club of South Australia was held on July 5, 1957, at the Anatomy Department, University of Adelaide.

Current Theories of Insulin Action.

I. G. JARRETT presented a résumé of the current theories of the interrelationships of carbohydrate and fat metabolism, and discussed the possible sites of insulin action. He referred to the importance of the initial phosphorylation of glucose and the consequence of a metabolic block at that level in connexion with the oxidation of carbohydrate and the synthesis of fat. He said that insulin was probably implicated in that early stage, and a primary metabolic block in diabetes could well be associated with an action of insulin in the transfer of glucose across cell membranes or in the transport of glucose to active enzyme sites. Differences between liver and muscle tissue were outlined. A further metabolic block in lipogenesis was discussed in the light of recent work on the possible role of anterior pituitary hormones. The effect of a block at that level was outlined in relation to ketosis.

Insulin and Experimental Diabetes.

B. J. POTTER said that experimental diabetes might be produced by pancreatectomy, by alloxan, by the growth hormone of the anterior pituitary lobe, by adrenal cortical hormones, or by continuous administration of carbohydrate. A comparison was made between the diabetes produced in sheep by pancreatectomy and that produced by an injection of alloxan. It had been found that the depancreatized sheep required less insulin than the alloxan diabetic sheep to control the diabetes; depancreatized sheep could be divided into two types, one of which was severely ketotic, while the other was only mildly ketotic, even though hyperglycemia was present in all cases. The fact that the latter could suddenly revert to the former type suggested that some other hormonal influence besides insulin might be implicated in diabetes. When the lower fatty acids (acetic, propionic and butyric) were administered to both depancreatized and alloxan diabetic sheep, a delayed utilization of those acids occurred, and concurrent observations on the blood concentration of sugar, ketone bodies and pyruvate suggested that some other factor besides a metabolic block in glycolysis might be present in diabetic sheep.

The Pre-Diabetic State.

R. A. BURSTON, discussing the pre-diabetic state, said that the study of human diabetes had revealed that influences of the disorder were present for many years before the accepted criteria for clinical diagnosis of the disease developed. That was shown in the abnormally large babies born to mothers who did not develop clinical diabetes until 10 to 15 years later. Those babies were liable to a curious combination of other morphological abnormalities, and if they were apparently normal, they might be endowed with a structurally distinct pattern of the smaller blood vessels, together with a tendency to rapid and excessive growth in childhood. Various hormonal factors were concerned with those occurrences, and it appeared that there were both a genetic and a maternal environmental factor in the development of those abnormalities. Evidence could be found to suggest that diabetes was a disorder which was present from the moment of conception.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

THE MEDICAL STAFF RESIGNS.¹

[From *The Australasian Medical Gazette*, March, 1884.]

At the fourth annual meeting of subscribers to the Sydney Hospital for Sick Children held on February 25th the following letter from the members of the medical staff resigning their appointment was read.

Sydney,
February 25, 1884.

Sir,

We the medical staff of the Hospital for Sick Children desire to tender our resignation. It is with regret that we feel ourselves compelled to take this step. We have always taken a great interest in the welfare of the institution and have from time to time made such recommendations as our special knowledge of hospital management suggested, for the better carrying on of the institution. These recommendations not having been carried out we feel that we have no alternative but to place our resignations in your hands. We shall be happy to continue to discharge our duties until the election of our successors.

We have the honour to be, Sir,

Your obedient Servants,

ALFRED ROBERTS,
ARTHUR ANNESLEY WEST,
THOMAS PICKBURN,
W. H. GOOD.

The resignation of the medical staff was accepted with thanks for past services.

Correspondence.

X-RAY THERAPY IN POST-TRAUMATIC ARTHRITIS, PARAARTHROSIS AND FASCITIS.

SIR: We are stimulated to write concerning Dr. Basil A. Stoll's paper, "X-Ray Therapy in Post-Traumatic Arthritis, Paraarthrosis and Fascitis", dealing with conditions which are only too common, incapacitating and difficult to cure. We feel strongly that, lest this publication should leave readers with the impression that X-ray therapy is the treatment of choice in many of the conditions which have been included under the above titles, it is pertinent to raise questions on several aspects of the thesis.

It appears that the maximum dosage of irradiation for any one condition is 1350r. We would like to know what the risks are in a young person, of skin cancer developing in the exposed skin, after the lapse of many years. We have been informed by a radiological colleague that a skin cancer has been reported some 40 years after exposure to 1500r, at the site of exposure. We realize that such a dosage is not usually regarded as dangerous, but we are impressed with the dictum "*primum non nocere*", and seek enlightenment. Furthermore, it appears that at the present stage of medical knowledge, the risks (not necessarily to life itself) to which the body as a whole is exposed from apparently innocuous dosages of X rays are not precisely known. We believe that physicians hesitate to employ radio-iodine as the definitive therapeutic weapon for primary thyrotoxicosis in young people because they fear long-delayed consequences. We are told also that there is a significantly higher incidence of carcinoma of the thyroid in individuals who have previously had irradiation to the thymus gland. We contemplate upon the patient, who at different times develops epicondylitis, plantar fasciitis and sprained wrist, and is likely then to receive a total dosage of 2400r. The overall dosage increases when we take into account the

¹From the original in the Mitchell Library, Sydney.

irradiation exposure of multiple repeated radiographic investigations.

We appreciate the necessity for maintaining perspective in such considerations as these; but we are concerned that a method fraught with possible dangers should be advocated for conditions which are amenable to less drastic forms of treatment. We refer, for example, to epicondylitis, which in our experience requires one, and at most three, injections of hydrocortisone for cure. We have been satisfied also with this simple method in ankle and wrist sprains, "painful heel", and chronic sprain of external knee ligaments—all conditions for which Dr. Stoll has used radiotherapy. The time and nuisance factors alone of these two forms of treatment do not bear comparison.

On the other hand, we will await with interest further figures from Dr. Stoll concerning radiotherapy in chronic painful hip lesions, which commonly occur in the older age groups, and which frequently defy all other forms of treatment. We are also impressed by the review of 28 cases of "paraarthrosis" of the shoulder. We are uncertain whether the term "relief" is intended to mean complete loss of pain; but if it does, the results are truly remarkable, and we are inclined to think then that this method may be the treatment of choice for this condition. We would have liked to see this particular review presented in more detail, and look forward to further analyses of results from Dr. Stoll.

Finally, we thank Dr. Stoll for stimulating interest and inquiry into these cosmopolitan and trying conditions. We hope he will reply, and that he will elaborate particularly on the danger to which we have alluded.

Yours, etc.,

F. J. GRAY,
J. S. COLLINGS,
G. J. BEALE,
N. MAIN.

2 Erin Street,
Richmond, E.I.,
Victoria.
July 15, 1957.

THE TROUBLESOME STAPHYLOCOCCUS.

SIR: I read with considerable interest the editorial of Saturday, July 6, on "The Troublesome Staphylococcus". I was particularly interested to read of the number of medical problems that beset paediatricians in view of the increased incidence of this most virulent and troublesome organism.

I was sorry, however, that no mention had been made of the increasing problem of osteomyelitis, for this has become one of the most common conditions confronting paediatric orthopaedists. It seems to me that an attack on the problem should be twofold: (i) An adequate public health programme so that the general public may be educated into the dangers and difficulties of the staphylococcus infection—maybe in the same way as has been done for diphtheria. (ii) A much greater awareness in the minds of the physicians and surgeons dealing with the problem and thus a much earlier diagnosis. The period between the onset of illness and diagnosis must be reduced by every means possible if we are to overcome this infection.

The problem of staphylococcus infections was discussed at the recent meeting of the Western Australian State Fellows of the Royal Australasian College of Surgeons, and all present were agreed that a combined approach *re* cross-infection in hospital was of paramount importance in preventing and the ultimate elimination of this modern scourge.

Yours, etc.,

224 St. George's Terrace,
Perth,
July 12, 1957.
G. M. BEDBROOK.

GUAIACOL-GLYCEROL-ETHER: A TRANQUILLIZING DRUG.

SIR: Your column, July 6, 1957, carries a letter from another drug firm belittling guaiacol-glycerol-ether as a tranquilizer, and by inference, claiming credit for introducing the substance into Australia. Now let us put the facts chronologically:

(a) Guaiacol-glycerol-ether has been used medicinally for almost sixty years, its principal use until about 1950 being

as an expectorant. For this purpose, it was introduced in Australia by Ciba Company Proprietary, Limited, in 1937.

(b) The discovery of the muscle-relaxant and consequently tranquillizing properties of the drug is credited to Ginzl *et alii* (Wien. med. Wchnschr., 1949). For this purpose it was produced in Germany by Brunnengraber and Company, in 1952, and introduced to Australia by our firm in 1953. This is the product to which Dr. Vann refers.

(c) Crookes Laboratories, Limited, revived gualacoglycerol-ether as an expectorant in Australia in April, 1957.

We have the permission of Dr. Douglas Vann and Ciba Company Proprietary, Limited, to refer to them in the above manner.

Yours, etc.,

R. W. EASTERBROOK,

Managing Director, R. W. Easterbrook
Proprietary, Limited.

P.O. Box 8,
Canterbury,
Victoria.
July 12, 1957.

Obituary.

ALAN WORSLEY HOLMES A COURT.

THE appreciation of the late Dr. A. W. Holmes & Court which we published in the issue of July 27, 1957, omitted one detail in his career of which we might have been expected to take particular note. That was the fact that for a period of something over six months in 1920 he was Assistant Editor of THE MEDICAL JOURNAL OF AUSTRALIA. The Editor then was the late H. W. Armit. During the time of his able chairmanship of the editorial committee of the *Australasian Annals of Medicine* Holmes & Court often referred to the fact that Armit had been his teacher in medical journalism.

HENRY BRUCE WILLIAMS.

WE have received from Dr. Nicholas Larkins the following appreciation of the late Dr. Henry Bruce Williams.

In July, 1956, the death of Dr. H. Bruce Williams brought to an end a long and devastating illness. For any member of the profession to contemplate the ravages and implications of malignant disease is something more than the ordinary layman can appreciate. Such was Bruce Williams's cross, and he bore it with the greatest of daring and fortitude, for it involved multiple surgery of a painful nature, disfigurement, uncertainty, disappointment. To all these he faced up in the intrepid fashion that characterized his work and teaching. He detested insincerity, uncertainty and cowardice.

Bruce Williams was one of the colourful personalities in the teaching of medicine in Sydney. As a young student, one heard stories of him as the man, the wit, the teacher, the obstetrician. He was all of these, and a rugged individualist to boot. I first met him in a group of students in the early thirties, and the experience of making his acquaintance lives long and vividly. He at once impressed one with his forceful picturesque personality and colourful expression. As a teacher, without equal, he taught systematically and dogmatically. What so impressed his students was that he applied to the practice of obstetrics what he preached, and it worked. It is no exaggeration to say that many of Bruce Williams's students even now practise their midwifery with a well-worn copy of his notes to hand. Many a time in a difficult obstetric case the writer has imagined the well-known husky voice hissing instructions into his ear, to experience the comfort and assurance that to do what Williams taught would result in a live mother and a live baby. He was a hard taskmaster in many ways, for he expected those he liked to attain and maintain a very high standard. Those he liked not or did not respect did not exist in his eyes.

Any doctor's ability must surely be assessed in the number of doctors' wives and relatives he is asked to treat and the number of his colleagues who seek consultation with him in difficult problems. Bruce Williams was one such. He was a superb obstetrician and consultant. He revered his masters and taught generously what he had learned. He applied his art in the treatment of his patients, who adored him. To his wife and son he was devoted, and his untimely death

must have been a terrific blow. They may take consolation in the knowledge that here was a physician who practised what he preached in the true Hippocratic fashion. What greater tribute can be paid to a doctor?

SIR HERBERT SCHLINK writes: I would also like to join my colleague Nicholas Larkins in paying tribute to a great obstetrician and, in the face of death, a very brave man.

The King George V Memorial Hospital was opened during the course of the second World War, and there was a dearth of mature obstetricians left in Sydney to assist in enabling the Board of Directors to establish a maternity service at the Royal Prince Alfred Hospital. Bruce Williams was asked for his help, and he gave up an assured professional career at the Royal Hospital for Women, Paddington, to do so. Until his death, he served the Royal Prince Alfred Hospital and the University of Sydney as few could. He was beloved by his students, and sacrificed his professional earning capacity in the interests of their clinical education. Even as a young man at the Royal Hospital for Women he displayed a wide grasp of his calling by inventing "The Williams' Obstetric Bed", which is in universal use to this day.

He cherished his friendships, and even loved his enemies. He was a lion-hearted man, and stood up to the fate that he was well aware was next door with a bravery rarely seen in human sufferers. We all at Prince Alfred grieve with his widow and son and feel his loss a personal one.

DR. G. E. CUMMINS writes: "He was my friend, faithful and just to me." It is with great sorrow that I write this obituary for my friend and teacher, the late Bruce Williams, whose untimely death removed a fine man and an excellent doctor from this community.

Bruce was born at the end of the last century—to be exact, on April 5, 1899, at Stockton on the north coast of New South Wales. His early education was carried out at the Sydney Boys' High School, and he began his university course in medicine as the first World War drew to a close. He graduated M.B., Ch.M. in 1924, and served for two years as a resident medical officer at Balmain Hospital. He was keen to follow the pursuits of obstetrics and gynaecology, and he was appointed to the resident staff of the Royal Hospital for Women; it was here that he gained his colossal knowledge of complicated obstetrics and gynaecology. For approximately ten years he acted as medical superintendent to that hospital, and in that time he must have seen an enormous amount of emergency work, because the Royal Hospital for Women and the Women's Hospital, Crown Street, were the only two large obstetric hospitals in this city. During those years also a large number of young doctors passed through his hands and learned the basic principles of obstetrics and gynaecology from him. The impression he made on these people was very marked, and to this day his ability is still spoken of in the highest regard by practitioners all over this country.

In 1932 he was made a Fellow of the Royal Australasian College of Surgeons, and in 1935 a member of the Royal College of Obstetricians and Gynaecologists; twelve years later he was made a Fellow of the latter College. Early in his career he became a tutor at St. Andrew's College and St. Paul's College, and the lectures which he gave to the students at those Colleges are legendary; indeed, his notes are still handed down from year to year. When King George V Memorial Hospital for Mothers and Babies was built, he joined the staff as a senior honorary obstetrician, and the clinical work which he did in the formative years of that hospital will forever remain an unseen monument to him. He taught obstetrics to nurses, to students, to resident medical officers, and was an adviser to many members of the junior honorary staff.

It would be impertinent of me to speak of his clinical ability; but I should say that when he was at the height of his career there was no better operative obstetrician in this country. He was long known to me by hearsay before I ever met him, mainly through my father, who knew him well, and who called upon his great skill on many occasions. When later I met him, I was amazed to find that a bluff, noisy exterior merely served as a foil to a gentle, kindly depth. He is survived by his wife, Gladys, and his son, Graham, who has subsequently graduated in medicine. The heights which Bruce attained will forever be a goal at which his son might aim.

I can find no better words to conclude than the following:

His life was gentle; and the elements
So mix'd in him, that Nature might stand up
And say to all the world, This was a man!

DR. FRANK PIGOTT writes: As one who was a student in what may be described as his heyday of practice, I should like to pay tribute to the memory of the late Dr. Bruce Williams. We first set eyes on Bruce in second year, when it became known that he was giving a lunch-hour lecture in the New Medical School. It was then and on subsequent occasions that we, as preclinical students, crept nervously into the lecture hall and heard for the first time those dynamic remarks uttered as only Bruce knew how; when we learnt "to avoid blind alleyways of medicine", and received other more *risqué* but none the less useful pieces of advice.

A generation of college men will recall with affection Friday nights' tutorials at Andrew's, when all the fifth year college men in medicine would gather for a two-hour session with Bruce. The session would start at 7 p.m.; the first hour would deal with anything from Bob Menzies to "Football and the Facts of Life"; then for an hour he would expound his obstetrical views in note form (which happily have recently been published in his book "Obstetric Practice"). How correct is Professor F. J. Browne in his foreword when he writes: "Those who knew the writer will often hear him speak through its pages." At these sessions one rapidly learnt in no uncertain terms what Bruce considered to be the right as well as the wrong method of dealing with all obstetrical complications. He spoke as an obstetrician with ten years' experience behind him as superintendent of the Royal Hospital for Women, and we quickly learnt, in theory at least, such things as when and when not to expect the patient to smell the flowers if they were brought to her.

In the early 1940's some of us, as residents, were privileged to sit at the feet of this master of obstetrical manipulations when his private practice was probably at its peak. We observed him time without number putting his theory into practice with masterly dexterity. Of above average stature, Bruce was blessed with small hands—fitting into size six and a half gloves. One will never cease to marvel at his skill at performing bipolar version in the patient of thirty weeks' pregnancy with *placenta prævia* and the cervix at two fingers' dilatation. Such treatment may not, of course, meet with universal approval from the modern trained obstetrician; but Bruce Williams, it must be remembered, trained in an era when Caesarean section was not the universal and safe operation that it is today, when blood transfusion was relied upon less, and when antibiotics were yet unknown.

Throughout one's association with Bruce, one always found him a forthright, though loyal, colleague, possessed of a bubbling sense of humour, and always ready, as he put it, "to pass the time of day" with a friend, no matter what his station might be. His senior professional career was given to the establishment of a sound obstetrical service at King George V Memorial Hospital, which he served through fifteen years from its opening in 1941. During those years within the hospital he gathered about him a company of close friends, and these, it is felt, were a source of great comfort to him in the difficult years which were to bring his colourful career to such an untimely end.

ISAAC JONES.

DR. BLOIS LAWTON sends the following appreciation of the late Dr. Isaac Jones.

Because of my friendship with him, I was asked to write some notes about Dr. Isaac Jones. During the period of our friendship he was a junior resident medical officer, clinical pathologist and medical tutor at Trinity College, where I was a resident student until the end of 1912. He was tutor there from May, 1911, to August, 1913. He occupied a high place in the honour list in 1909, when he graduated. Those who obtained honours were remarkably brilliant, and all except two, who were killed in France, became leaders in the branch of medicine in which they engaged. One of them told me that while they were residents at the Melbourne Hospital, "Ike" asked him to go to Boronia, which is in the hills within 20 miles of Melbourne, to see the flowers which abound there. On arriving there, they began to walk up hill and soon reached a small bush State school. "Ike" said that he had been a teacher in that school. He turned round and looked at Melbourne. He said that he came out of the school one day, looked towards Melbourne, and said to himself: "Jones, this is no place for you." He decided then to go to Melbourne to do the medical course, and he did, with the least possible delay. When he was a junior resident medical officer he became known to students

as a good teacher. Perhaps his early training helped him in this. When he was clinical pathologist students haunted his laboratory. Students at Trinity College received wonderful help from him, and those who aspired to obtain honours were particularly grateful to him. After he finished his work at the hospital, he obtained a list of patients admitted during the day and examined them, and selected one or two; we were told to examine them early next morning, and in the evening "Ike" expected us to know all about them. When we had given our views, he gave his, and praised or blamed us; but he was always kindly and helpful. We were amazed by the observations he had made in the short time available. After his departure to England, our only meeting



was on October 30, 1919, at the Royal College of Physicians, when we heard that we had gained our M.R.C.P. It was characteristic of "Ike" to suggest that we should celebrate our success by having a cup of tea, and we did so.

Our sympathy is extended to his widow and two sons.

A correspondent who wishes to remain anonymous writes: "I.J.", or "Ikey" Jones, as he was always called at St. Thomas's Hospital, was Australian born, and qualified in Melbourne in 1909. The writer, as a small boy, first met him at the Royal Herbert Hospital, Woolwich, where he was medical specialist. Major Jones was almost a legendary figure then, with his bristling personality and uncompromising opposition to alcohol and tobacco, and his glass of milk with every meal. After the war he did not return to Australia, and became Chief Medical Officer to the Metropolitan Police. In 1922 he joined the first medical professional unit at St. Thomas's Hospital as deputy, under Professor H. Maclean. Both posts in those days were part time. He was responsible for St. Thomas's becoming in effect the Metropolitan Police Hospital, and he was a great Chief Medical Officer to them, always fair, very generous and understanding, admired as well as profoundly respected by them. He organized and directed their very efficient medical service. Into the students who came to St. Thomas's in the nineteen-twenties and nineteen-thirties he infused an enthusiasm for medicine which could not be resisted. He was a great make-learn teacher of the basic facts and techniques of ordinary clinical

work. He could give a bedside discourse on any subject over a patient, who might be highly surprised, because it could be quite irrelevant to the condition from which he was suffering. He became an even more legendary figure, and many were the stories about him. Though not always to his immediate credit, they often turned in his favour. Once he was made fun of for posing as a spurious specialist witness in a fatal case of paratyphoid. Later it was found that he had handled an epidemic of paratyphoid of considerable size in Melbourne. He had a flair for the social and psychological aspect of his cases, and clearly his most potent therapeutic weapon was his own personality. One had only to deputize in his gastric clinic to realize this. Much of the method of teaching in the first medical unit was designed by him. In the early days he was always searching for something new, though he did not publish much original work. In the basement of the hospital in the early 1920's, following the technique of Banting and Best, he brewed the extracts of the pancreas which were the first crude insulins used at St. Thomas's before insulin was generally available. Maclean and Jones published their work on the alkali treatment of peptic ulcer, which in principle is the basis of treatment to this day. He was always a challenger, and would never allow his former pupils, however high they rose in the hierarchy, to become complacent in teaching. A great personality, almost unknown to post-war generations at St. Thomas's, has gone. His spirit will live.

A friend writes: As the weeks have passed, men and women in various walks of life have felt poignantly how much they have lost by the sudden but peaceful death of Isaac Jones. Many were proud to claim the friendship of this Australian, who made his own imprint on London in the course of a long and honourable life, devoted to his profession and to helping his fellow men. His lay friends learned that he was held in affectionate respect in his profession, but he had a diffidence over matters of place. The only reward he sought came from a private sense of accomplishment in his own field, opportunities for service, a happy home life, and quiet pleasures, such as he found in reading and conversation, and tolling in his garden, where the distinguished London physician became the labouring countryman. He had a horror of being "fashionable", but he enjoyed his success in an engaging way. He had great gifts, and he gave freely. He had his native directness and independence, high standards, robust integrity, a mastery of his subject, a penetrating understanding of human nature and its mutability, and, with all that, humility. War is said to be a test of character. True this certainly was in his case. I do not refer to his active service in the first war, but to his special service in the late war, because something can now be said, and also because it was a phase of his life that showed the man he was. It so happened that among those concerned with the conduct of what may be called irregular, or underground, warfare were a number of his private patients and personal friends. They turned to him for help in this, as they had over their family medical troubles in the past. For most of the war he gave freely of his time and talents to guide and tend those engaged in this work, including some of the bravest British and Allied underground agents whose names have become known through death in German hands. They responded to the doctor as a man of intuitive understanding. He never pried into their secret enterprises, but somehow he knew their secret problems. The quiet consulting room in Queen Anne Street became operational. The observant man behind the desk, in his own way, was one of those who helped to win the war. It may seem a paradox that the more such warfare is of an irregular character (and stronger words might be used of it), the more vital it is that power in it should be in the hands of men of integrity and good character. The best agents were of that type. The subject is a large one. It is enough to say that in this strange world of the shadows, some of "Ike" Jones's highest qualities of character and *expertise* found their unobtrusive and unacknowledged (as was his wish) consummation. In such a field the charlatan (who would have been a menace) and the conventional (who would have been at a loss) would have failed (to say no more) to grasp the problems, or to bring to bear a true sense of values. "Ike's" sense of values was never in doubt there, any more than in his overt and more conventional activities. His judgement was superb in new and unorthodox situations, and his lasting belief in *principia* and often simple remedies was vindicated.

Isaac Jones, although old in years at the end, had not become old in his outlook. His concern for others and his interests as a perennial student of life remained strong. He remained himself, all through, active in doing good, incapable of meanness or dissimulation, and unconcerned with

expediency or ambition. Men knew where they stood with him. He is remembered vividly as a forceful character, and mourned as a trusty and irreplaceable friend. The sadness remains that we are robbed of his bustling presence and his sagacious support, and with it the sombre thought that with his last breath there perished all that wisdom and talent, and the garnered experience of a full life. He said a few weeks before his death: "Years ago I used to be puzzled sometimes over diagnosis. Now it is often as plain as if the answer were written in large letters on the wall." But those who believe that there is a purpose in this life, a subject on which his thoughts were private, find it comforting to believe that such a spirit does not perish.

OTTO SADDLER HIRSCHFELD.

Dr. OTTO SADDLER HIRSCHFELD, whose death occurred on May 29, 1957, was born at Wickham Terrace, Brisbane, in 1898, the eldest son of Eugen and Annie Hirschfeld. He was educated at the Normal School and the Brisbane Grammar School. His tertiary education was received at the University of Queensland, where he took the degrees of bachelor of science in 1919 and master of science in 1921, and at the University of Melbourne, where he qualified M.B., B.S. in 1923. In that and the following year he was a resident medical officer at the Melbourne Hospital, and he commenced private practice in Brisbane in 1924. He was appointed honorary physician to out-patients at the Brisbane Hospital in 1925; in 1936 he was appointed honorary physician to in-patients, and in 1938, senior physician, part time. The Royal Australasian College of Physicians admitted him to Membership in 1951, and to Fellowship in 1956. The honorary degree of doctor of laws was conferred upon him by the University of Melbourne, at the centenary celebrations of that university in 1956.

Otto Hirschfeld's main interests were therapeutics, *diabetes mellitus* and arbitration in industrial medicine. He was a member of numerous drug committees, including the Queensland Advisory Committee on Hospital Drugs and Surgical Appliances, and the Poisons Schedule Committee of the National Health and Medical Research Council. He was a specialist, and a clinical lecturer in the Faculties of Medicine and Dentistry of the University of Queensland. In 1950 he was elected to the Senate of the University of Queensland, and was appointed Deputy Chancellor in 1952 and Chancellor in 1953. He was chairman of the Part-Time Medical Officers' Association of the Brisbane and South Coast Hospitals Board, and had represented that association on the Faculty of Medicine.

As a young man, Otto Hirschfeld played football and rowed. In later life he adopted the hobbies of bridge and stamp-collecting. It is typical of him that in both he had much success in international competitions. His sudden death means a great loss to the medical profession in Queensland, whose sympathy is extended to his widow, his two sons (both doctors) and his two daughters.

Dr. C. TUCKER writes: For nearly 30 years Otto Hirschfeld was a member of the Johnsonian Club; he was twice its president and, as an executive officer for the last 20 years, was its guiding spirit. His broad sympathies, sound judgement and remarkable memory, all tempered with a delightful wit and good humour, made him a notable figure in its life, and endeared him to all who were so fortunate as to know him here, where he so happily relaxed and for a time was able to shed his many burdens. Be sure he will occupy an honoured place in that happy band headed by Abou Ben Adhem.

Dr. K. B. FRASER writes: The sudden and unexpected death of Otto Saddler Hirschfeld has cast a gloom over the whole of the medical profession in Queensland.

I first remember him in 1911, when we found ourselves together as new boys at the Brisbane Grammar School. Over the ensuing five years we passed together through the school, often sitting side by side in class. One particular room I can remember well, where we were in a seat for two, he occupying, as always, two-thirds of the seat. Here our favourite pastime was to catch the other unawares and wedge the victim's head under the desk, which seemed to have been built specially for the purpose. Rugby football was his game, and in his last year at school he was "lock" in the forwards in the first fifteen; very big—even in those days he weighed almost thirteen stone—he was a hard-rucking and determined player.

From this time on our paths separated for a time, and although we were both in practice in Brisbane during the 1920's and 1930's, we were attached to different hospitals, and saw comparatively little of each other. Ten years ago, Otto and his family came to live next door to our home in Clayfield. We remained neighbours until his death, and so were able to renew the close friendship of our youth. He was a keen gardener, and in the week-ends could always be found pottering about among his flowers, and tending to the trees and shrubs which he loved so well.

Over the last eighteen months of his life I sat with him on the Senate of the University of Queensland, the destinies of which he directed as Chancellor. Here he displayed to the full the qualities of sound common sense and reasoned judgement, which had established his reputation as a first-class physician. Coming to the post of Chancellor in 1953 without any long previous training in administrative responsibility, his strong personality, his quick grasp of detail and his impartial judgement combined to make him very quickly a respected and well-liked figure in the university world. Slow speaking and slow moving, he was able to get through a tremendous amount of work, for he had an unusually quick intelligence, and a capacity to eliminate unessentials and get to the heart of any problem. Trained in the hard school of general practice, he had a "down to earth" approach to medicine, and an innate kindness, often covered with an assumption of bluntness, which endeared him to all his patients. Bridge and racing were among his hobbies; but best of all, he loved his home and his family life, and I verily believe he was at his happiest, as I so often saw him, out in his old clothes in his beloved garden.

One could not have wished for a kinder physician or a good colleague more devoid of ostentation. All his friends and patients are sad indeed at the untimely death of a man of such great understanding, kindness and humility.

PROFESSOR DOUGLAS GORDON writes: When a new medical school is launched, the lecturers as well as the students are new and unknown, and the latter have no local fund of anecdote and legend to guide them as to what to expect from the former, as year by year they pass up through the course until the moulding process is eventually completed. Those of us in the earlier years in Queensland found our teachers to be men of force and character whom we greatly admired and respected. Rather surprisingly, however, most students reserved their greatest affection and trust for the least pretentious and least articulate of the clinical staff, many of whom were quite impressive teachers. This particular object of regard was Otto Hirschfeld. It has always been difficult for a superficial observer to understand the special affinity which existed between him and his students—a confidence and liking which carried on into their later professional lives. I think probably that the rawest of students realized, after a ward round or two with him, that they were in the presence of a master clinician who radiated knowledge, honesty and common sense. He had the rare gift of "getting down to the wood" immediately, no matter how complex the problem, and he inspired confidence in both patients and students.

In after years, affectionate tradition came to surround him with an aura of amazingly correct diagnoses produced in impossible circumstances, of countless quiet kindnesses done to numerous students, of worldly wisdom that solved the most difficult of personal problems. In more recent times, he became that indefinable being, "a consultant's consultant"—but his students had long before elevated him to that status. "Old Otto", who liked to pretend that he did not suffer fools gladly and fooled no one, was the refuge of many who were in trouble.

When I came to know him better, I also realized that his apparent disdain for dotting the i's and crossing the t's in realms scientific hid an extremely logical, scientific and well-read mind. He had a deceptive way of humbly consulting you on matters pertaining to your own little circumscribed backwater of medicine; but you usually discovered, to your chagrin, that he was very well versed not only in it but in most other specialties. On one occasion I heard him throw a spanner into a discussion on the parasites of sheep in a very specialized non-medical gathering; when someone had recovered sufficiently to ask him how on earth he knew anything of the matter, he gave his disarming, half-embarrassed grin and murmured that when he was "a lad in science" he had done a "little work on it". It is perhaps well to remember that he came of a family which had been busily interested in improved pastures and native pasture species when hardly anyone else was talking about this now popular subject. His father was asked by a former Premier to address State Cabinet on his experience

with grasses. Otto Hirschfeld inherited this interest in the land, its people and its problems, and had that rare thing in modern urban educated man—an appreciation that Australia stretches far beyond its great wens.

Apart from his varied and wide scientific and medical knowledge, Otto Hirschfeld was a man made remarkable by his very kindly interest in the ordinary common man. Surely few men have known well such a wide cross-section of the community. Judges, politicians, wharfies, punters, prostitutes, union officials, executives, police and criminals, farmers and pastoralists—all passed through his rooms, and he could in passing influence them all. Beneath all the apparent derision and cynicism for the circus of life were his spiritual equanimity, tolerance and kindness. He was influenced very little by the passions and prejudices—social, religious or political—that usually rend human relations. He never judged a man by his tag, but by how he found him. He ambled through life serenely with his huge bulk, needing only a cloak to make him a Chestertonian figure. He had several minor amusing eccentricities. Often he was cursing you, somebody or something, but at the end of it he would grin, and you would know he meant not a word of it. His enemies little knew how kindly he thought of them.



He certainly disliked pretension dressed up in scientific jargon, just as much as he disliked a scientific outlook which tilted its own narrow field and failed to realize the rich human needs and values in all walks of life. However, he bore very little personal malice towards the proponents of such an outlook. In spite of the fact that he seemed to know almost anybody of importance in the State and almost anything of note that happened, he probably led a rather lonely life, for he took too broad a view ever to be wholeheartedly in accord with any of us beating any particular sectional drum, be it academic, professional or political. The individual who is incapable of developing the mental blind spots necessary for complete allegiance to some group, organization or party tills rather a solitary row in a highly developed culture.

In his last years, when various offices were thrust upon him, he developed a surprising flair for diplomacy, and often kept silent over matters in committee to avoid causing discord. On matters of principle, however, he could be very much to the point and very devastating; but he seemed to make a point after a meeting of going up to the object of his official wrath and being completely charming to him in his unaffected way. It takes years to realize that the somewhat cynical often have very high ideals, and very few people realized that he had a basic concept that it was the

duty of a citizen of a democracy to serve his State without kudos or payment in whatever way he could. He held quite a number of unsung, semi-official offices, which brought him vexation and sometimes opprobrium rather than praise; but I think he took the view—though he never made any song about it—that if your country had nurtured you, it was your job in turn to do your best by its organized society. How he carried on his numerous activities in the last few years must always be a mystery.

The University, his hospital, his profession and this State have suffered the loss of a brilliant, unassuming man of character; more than this, however, is our personal farewell to Otto Hirschfeld—sometimes rough, sometimes profane, but always wise, learned and kind.

DR. DOUGLAS ANDERSON writes: I should like to pay a tribute to Dr. Otto Hirschfeld, whose untimely death recently has been a sad shock to his friends in Sydney. He was a very sound, very wise, very kind and admirable physician. We were in Cairns together last year for the North Queensland Medical Conference, and it was interesting to notice the ovations that he received and the affectionate way in which Queensland doctors generally referred to him. I think that he was delighted with the honour done to him by his election as Chancellor of the University, and his equanimity, good humour, probity and toughness fitted him well to preside over it; but the office made very heavy demands upon him, as his friends could see with misgiving, and must have exacted a severe toll of the physical energy of a busy doctor. One's sympathy goes out to his medical and academic colleagues in their loss—and most deeply to his happy, hospitable family.

DR. L. W. GALL writes: My friendship with the late Dr. Otto Hirschfeld has been a long one, extending back to the early days of the century. Having finished his schooling, he did a science course at the University of Queensland, and then proceeded to his degree in medicine at the University of Melbourne. Eventually he returned to Brisbane and established a practice. His work, of course, was always his first interest; but he had many other interests—stamps, bridge problems, crossword puzzles from all English-speaking countries, theoretical breeding of blood-stock, antique china and glass, and "heavy" literature. He was also always interested in the affairs of the University of Queensland. As I have already mentioned, he was a graduate of two universities, Queensland in science and Melbourne in medicine. One conferred on him an honorary degree of LL.D. and the other made him its Chancellor—surely a signal honour. When he first took his seat on the Senate of the University of Queensland, he wore the self-same gown that his father had worn at Senate meetings forty years earlier. As well as being Chancellor of the University, he was a clinical lecturer and examiner in medicine, a member of the Faculty of Medicine, and a member of the Advisory Committee of Drugs and Equipment and also of the Poisons Schedule Committee of the National Health and Medical Research Council. Added to this, he was chairman of the Part-Time Officers' Association of the Brisbane Hospital. He was also a member of the Queensland Turf Club and of Brisbane's Johnsonian Club—a committeeman of the latter for many years and a past president, a good clubman all round. For nearly twenty years he was a senior physician on the staff of the Brisbane Hospital, which entailed many hours spent doing ward rounds and tutoring students. It was amazing how he fitted all his duties and obligations into the ordinary routine of the day, for he never seemed to be in a hurry and he was never late. He was a member of The Royal Australasian College of Physicians from 1951 until elected to a Fellowship in 1955. For quite a number of years he had made an intensive study of diabetes, diabetes and their problems, and was regarded as an authority by his colleagues. In his position as Chancellor of the University he was noted for his approachability and his ability to see the other fellow's point of view, and was a sound adviser.

It is with a heavy heart that I pen these lines, and I am sure that there are a lot of other people who feel the same, for Otto Hirschfeld had innumerable friends in every walk of life, an evidence of which was the overflowing state of St. John's Cathedral at his funeral oration delivered by Archbishop Halse. The community, his patients, the university, the medical profession and The Royal Australasian College of Physicians will be the poorer for his death.

THOMAS ARTHUR PRICE.

DR. THOMAS ARTHUR PRICE, whose death occurred on May 1, 1957, was born in Brisbane on October 10, 1871. He received his education at the Brisbane Grammar School, and afterwards spent four years in an architect's office in Brisbane before proceeding to Edinburgh; he matriculated there in 1893, and qualified in medicine in 1899. Returning to Australia, he held various hospital appointments; he was for a time a resident medical officer at the Adelaide Hospital and also at the Goodna Mental Hospital. He went to England and studied ophthalmology in London, but returned to Queensland and took up a post at the Willowburn Mental Hospital. Finally he settled into general practice in Toowoomba, where he spent the rest of his working life. In 1905 he married Hester Constance Borton. There were five children, three sons and two daughters; one son died in childhood, and another, an officer of the Royal Australian Air Force, was killed during the second World War, in 1943. In the following year Mrs. Price died.

Dr. Price gave up general practice some time after the first World War, and specialized in eye, ear, nose and throat work. He did a great deal for the returned soldiers, and was made an honorary life member of the Returned Sailors, Soldiers and Airmen's Imperial League of Australia. He was much interested in mosquito control, and sought (and achieved) election to the city council in order to do something about it; he served one term as mayor. The "Dr. Price Memorial Centre" was named in recognition of his work for the benefit of Toowoomba. The centre was officially opened on February 4, 1956, and Dr. Price went to Toowoomba from Sydney for the occasion; that was his last visit to Toowoomba. During the financial depression in the 1930's, he organized a self-help camp, called "Eagle's Nest", for the travelling unemployed. This was a place where men could stay for a week or two, being provided with a clean bed, good food and often fresh hope. It helped many, and put a number on their feet again. Dr. and Mrs. Price started the Boy Scout and Girl Guide movements in Toowoomba, and were in charge of them for many years. All their children were Boy Scouts or Girl Guides.

The family home was built on the range overlooking Table Top, and from there Dr. and Mrs. Price made many trips to the mountains to the south and east. They were very interested in nature, especially trees and shrubs; of these they collected hundreds of specimens and had them all named. It was Dr. Price's custom for many years to climb to the top of Table Top every morning before breakfast; this took him from 6 to 7.30 a.m., and possibly contributed to the physical fitness he enjoyed for so long. He was a keen mountain climber, and climbed most of the mountains in south-east Queensland, including Mount Barney. His Boy Scouts went on many of his camping trips. Camping was also a family activity, and the children all carried their "swags". Dr. Price was an enthusiastic angler, and made two trips to the Great Barrier Reef.

Accompanying tributes from his friends deal with other aspects of Dr. Price's career, more especially his activities on behalf of the medical profession. The whole is a record of a life well spent, and shows what manner of man he was. Our sympathy is extended to the two daughters and one son who survive him.

DR. J. G. WAGNER writes: Thomas Arthur Price wove the pattern of his life with noble thoughts and good deeds. His love for his fellow man and his zeal in the cause of the under-privileged were best shown in the dark days of depression by his "swaggies' camp". In a woodland setting, on the slopes of the Toowoomba Range, he built shacks, kitchen, dining-room and baths to provide temporary accommodation for those unemployed who were compelled by law to travel in order to obtain rations. At this camp, weary and dejected men were given an opportunity for physical and mental refreshment, for which they blessed the name of Thomas Price for many a year thereafter. He was a good Scout, and played a large part in the development of the Boy Scout movement in Queensland. Even in his old age, he loved to tramp at dawn along the bushy slopes of his beloved range. Toowoomba has honoured him for his public work in that city, of which mosquito eradication was a highlight. It was characteristic of him that prosecutions for breaches of city ordinances were always directed against citizens of substance.

For his outstanding work for the medical profession in the whole of Australia, the Queensland Branch of the British Medical Association appointed him vice-president, a rare appointment of great honour in the Branch. He was the

originator of a national health policy, and devoted himself assiduously to its acceptance by the medical profession in Australia. He gave up his practice for a time, and visited the various States for this purpose. Price had a marvellous capacity for smoothing down antipathies. He was prime mover in establishing a state of harmony between the friendly societies in Queensland and the British Medical Association. A joint committee of the two bodies was formed, which considered complaints and difficulties, and arrived at a common understanding. This committee continued its successful operation until lodge practice as such was merged into the present national health scheme. Cabinet ministers, under-secretaries and directors had complete confidence in his integrity, so that his discussions with them on behalf of the profession always received a good hearing. For these attributes he was known within the Branch Council as "the man with the oiled feather". He was almost naive in his implicit trust in his fellow man. His influence for good on all who knew him was profound.

DR. ALAN LEE writes: In the medico-political field, Dr. Price occupied for many years a very prominent position. An idealist by nature, and a firm believer in the virtues of the family doctor, he was very concerned that the general practitioner's remuneration should be adequate to allow ample time for the unhurried examination of the patient. In 1937, when the Commonwealth Government offered a very low capitation rate under the proposed National Health Insurance scheme, Dr. Price felt that this threatened such a degeneration of medical practice in Australia that no effort should be spared to prevent its implementation. He offered to give up his practice and go through the Commonwealth to organize the defence of the Association against these proposals, and actually did a great deal of travelling both in Queensland and in other States. Amongst the papers concerning national insurance in the archives of the Queensland Branch, there are so many notes by Dr. Price on every aspect of the matter that it is now difficult to disentangle the official British Medical Association view from Dr. Price's, if in fact they were not identical.

After this period of professional danger was past, and with increasing age, his interest in medical politics seemed to diminish, and he expressed increasing disapproval of some of the policies advocated or accepted by the Association. Friendly society practice, under conditions of such adequate remuneration as to allow time for good work, had his full approval, and I doubt if he ever forgave the profession for its part in the destruction of this system, or for its acceptance of the Pensioner Medical Service, which he abhorred as a negation of the type of medical practice for which he had fought.

Apart from his long period as a member of the Council of the Queensland Branch of the British Medical Association—no light task, with fortnightly meetings while he was living nearly 100 miles from Brisbane—Dr. Price represented the Branch on the Federal Council from 1936 to 1944. Uncompromising in his absolute honesty and adherence to principles, he was never a seeker after office, but content to maintain a viewpoint irrespective of its popularity or otherwise with his colleagues. When he retired from the Branch Council he was appointed vice-president, the only recipient of this honour within living memory.

His professional life was that of an oto-rhino-laryngologist, and as the only such specialist west of Brisbane, he served his community in private practice and at the Toowoomba General Hospital for very many years. But it was in his home, on the very edge of The Range, that he was seen at his best. A mountain climber, and a Boy Scout leader till late in life, his practical compassion for the poor and the unfortunate was unbounded. During the depression years, though far from rich, he maintained on his property a small community of unemployed persons, and provided them from his own resources with the necessities of life. His other community activities were manifold, and as Mayor of Toowoomba he forced the city to adopt measures which have relieved it completely of mosquitoes. Toowoomba in its turn has honoured him by naming a children's playground after him.

Tom Price was indeed a man whom any city and any State should be proud to possess and to honour.

DR. F. W. R. LUKIN writes: The late Thomas Price came to the Council of the Queensland Branch of the British Medical Association with the reputation of being an idealist. He very soon demonstrated that, with his additional sterling characteristics, this was the first step towards practical achievement, and there has probably been no man in the history of the British Medical Association in Queensland who

by the force of his personality has achieved the settlement of so many knotty problems. He brought to the discussions between the British Medical Association and outside bodies a completely new technique. His first objective, in any problem, was to seek the point of view of his opponents, and to this point of view he gave his most earnest and unprejudiced attention. It was exactly this quality which helped to make him such a successful negotiator. No difficulty was experienced by him in finding the important principles which were at stake, and in proving that the principles usually applied equally to both parties. From there he seemed to find it easy to determine the minor divergencies and to propose a settlement which could cover most of the points in dispute.



It has been said of many men "that even their bitterest opponents . . ."; this would not be applicable to Tom. Those who found themselves in the opposing camp were inspired with the sentiments present in the ranks of Tuscany. They held him in respect, and gave him their trust, if not their agreement. In the troublesome days of the past, he was a pillar of strength to the British Medical Association. It is certain that all the other community interests which have been assisted by his advice would wholeheartedly support this assessment of his qualities. He will be greatly missed by all those who were honoured and enlightened by his friendship.

DR. H. W. HORN writes: Though Dr. Price is no longer with us, his name will always be an honoured one in Queensland. His civic achievements in Toowoomba won for him well-deserved praise and admiration, and though these took place many years ago, one still hears of the part he played in eradicating mosquitoes from that city. As a member of the Queensland Branch Council and one of its representatives on the Federal Council, he always served the profession with great devotion, and despite the two and a half hours' drive from Toowoomba he rarely missed a Council meeting. He played a leading part in the late thirties in the profession's successful resistance to the threatened National Health Insurance scheme, and I still remember his armament of facts and figures when he stood before a meeting. His life was long, but full, and much of it was freely given to the service of his fellows. We must bid him farewell, but we shall not forget him.

DR. CHARLES R. MORTON writes: Men of truly great character are unfortunately few and far between, and the opportunity of close association with such does not fall to

the lot of many. Someone once said that a person who worked with his hands, his head and his heart was an artist. It was my great privilege to work in close association with such in the person of Dr. Thomas Arthur Price, affectionately known to his friends by his scouting name, "Eagle". His life was dedicated to the service of his fellow man, and this was exemplified in his family life, his professional career and his public life.

To his professional career, over forty years of which were spent practising ophthalmology and oto-rhino-laryngology, he brought outstanding knowledge and skill, an unusually extensive knowledge of general medicine for a specialist, and a sympathetic understanding of human nature. He carried into specialist practice a personal and intimate relationship with his patients, which is now unfortunately considered "out-moded" and is rapidly disappearing from medical practice. He was that unusual combination, the "thinker" and the "man of action". To "Eagle", the individuality of the human being was paramount, and when there appeared a likelihood of nationalization of the medical profession with its inevitable denial of the rights of the individual, both patient and doctor, he accepted the challenge. He spent many years of active work on behalf of the medical profession as a Council member, and President in 1933 and again in 1937, of the Queensland Branch of the British Medical Association, and as Queensland representative on the Federal Council of the British Medical Association from 1935 to 1944. His worldwide knowledge of matters medico-political undoubtedly played a big part in the prevention of the catastrophe that faced the medical profession.

Before finally embracing a medical career, "Eagle" had studied architecture. He then turned to medicine, and graduated from the University of Edinburgh in 1899. His first post-graduate studies turned to public health, and he obtained the diploma in public health, Edinburgh and Glasgow, in 1901; he then became interested in the specialties of ophthalmology and oto-rhino-laryngology, which became his lifelong medical career.

Naturally, on entering practice in Toowoomba, he became interested in civic affairs, particularly from the public health aspect. During his term as Mayor of the City of Toowoomba, he accomplished the eradication of the mosquito pest, which achievement is now part of the history of our State. He also became interested in the Boy Scout movement, and in this sphere he found full expression for his philosophy of the individual. Many a youth can look back on "Eagle" as his guide, philosopher and friend when he first encountered the world of hard knocks. "Eagle" found further expression of his insatiable desire for service to his fellow men during the depression years, when, together with a small band of kindred practical idealists, he established a self-supporting and self-governing community for the itinerant unemployed. This community, appropriately designated "Eagle's Nest", was established in beautiful bush surroundings, at the foot of the Range just below the City of Toowoomba, and served its very useful purpose throughout the depression years, giving to many a lost soul a new hope in life. Although with the recovery of the national economy the camp eventually disbanded, its memory will remain as an outstanding example of practical Christianity.

So has passed a man whose life was based on peace, truth, love, simplicity and self-denial, a man who actually believed what he preached, and furthermore, practised what he preached.

Congresses.

THE FIRST ASIAN REGIONAL PÆDIATRIC CONGRESS.

The first Asian Regional Pædiatric Congress will be held at Singapore from May 26 to 30, 1958; it is being organized by the Singapore Pædiatric Society, and its history is as follows.

At the eighth International Pædiatric Congress held in Copenhagen in July, 1956, it was agreed at a meeting of representatives of the National Committees that regional conferences would give a greater opportunity for pædiatricians to discuss problems related to their specific areas than was possible at an international congress. After this meeting, representatives from the countries in South-East Asia and the West Pacific and from Australia met to discuss the possibility of holding a regional congress. It was agreed by those present to proceed with investigations

for holding such a congress in Singapore in 1958. Subsequently the matter was considered by the Singapore Pædiatric Society, and at its annual general meeting held on February 8, 1957, the Society resolved to organize the proposed Congress for 1958 and set up an Organizing Committee for this purpose. It is hoped that this Congress will be the forerunner of similar congresses to be held in other centres in the Region.

The objects of the Congress are as follows: (i) to enable pædiatricians and doctors interested in child health to meet together to discuss problems common to the Regions covered by the Congress; (ii) to stimulate the study of health problems relating to children in these Regions and their amelioration; (iii) to encourage friendship and cooperation between professional workers in the field of child health.

The Regions invited include the Indian Subcontinent, the Far East, South-East Asia and Australasia. Governments are invited to send official delegates to participate in the Congress. Invitations are also sent to various universities and scientific institutions, to members of pædiatric and other scientific societies through their organizations and directly to doctors.

The venue of the Congress will be the Medical School, University of Malaya, Singapore, and the Pædiatric Unit, General Hospital, Singapore. The language of the Congress will be English. However, if there is a demand for the use of another language in addition to English, the Organizing Committee will consider this question further.

The following subjects have been suggested for papers and discussion: infantile beriberi; the incidence of rheumatic fever; blood disorders in the Region; the kwashiorkor syndrome in the Region; gastro-enteritis, with special reference to prevention; viral diseases of the nervous system; liver disorders in childhood; methods of controlling worm infestation; the prevention of tuberculosis in children; education in child health in an illiterate community; the incidence of disease in the Region, with special reference to the planning of child health programmes; perinatal and neonatal mortality; abdominal surgery in childhood; an orthopaedic subject. This is a provisional list, and the Organizing Committee would welcome further suggestions. However, the final decisions regarding subjects for discussion, the presenters of papers and the arrangement of the programme will rest with the Organizing Committee. It is emphasized that the Congress is primarily interested in the problems of child health as manifested in Asian countries.

Delegates wishing to present material for a scientific exhibit or to show a film at the Congress should communicate as soon as possible with the Organizing Secretary.

The office-bearers are as follows: President of the Congress, Dr. G. Haridas; Vice-Presidents, Professor E. S. Monteiro and Dr. G. Keys Smith; Chairman of the Organizing Committee, Dr. C. Elaine Field; Organizing Secretary, Dr. Tay Kah Seng; Congress Treasurer, Dr. Sylvia Goh.

The method of joining the Congress is as follows: (i) An advance registration form should be filled in and sent as soon as possible to the Organizing Secretary. (ii) The official registration form, which will be sent on receipt of the advance registration form, should be forwarded to the Organizing Secretary before December 31, 1957, together with a registration fee of 25 Malayan dollars. Late entries, up to March 31, 1958, may be accepted, subject to the number of applications already received. Cheques or drafts should be made payable to the "First Asian Regional Pædiatric Congress", and should be paid in Malayan currency or in sterling. Registration fees are not returnable. The bank is the Chartered Bank, Raffles Place, Singapore.

The expenses of travel to and from the Congress are the responsibility of the delegates themselves or of their sponsoring Governments or organizations. The Congress will be in session from Monday to Friday, May 26 to 30, inclusive, so that it is possible for delegates to travel during the week-ends. Thomas Cook and Son, Limited, will aid with transportation and currency arrangements.

The cost of accommodation is the responsibility of delegates; but it is hoped that it will be possible to accommodate delegates from outside Malaya inexpensively, either privately or in a university hostel, if they so desire. Hotel accommodation may be arranged through Thomas Cook and Son, Limited.

All correspondence should be addressed to The Organizing Secretary, First Asian Regional Pædiatric Congress, Pædiatric Unit, General Hospital, Singapore 3. Telephone: 24-14. Cable address: "Pædes, Singapore."

FIFTH INTERNATIONAL CONGRESS OF INTERNAL MEDICINE.

THE International Society of Internal Medicine will hold its fifth International Congress of Internal Medicine at Philadelphia on April 24 to 26, 1958. This will be the first meeting of the Society outside Europe. At the Congress it is intended, through lectures and panels, "to analyse medical achievements of world-wide significance, to evaluate certain apparent problems and to chart courses of action designed to enhance technical knowledge and to aid in the continuing war against disease". At the same time, "the plan includes such social and cultural activities as will tend to promote cooperation, friendship and mutual understanding among physicians and peace among their countries". The President of the Congress is Dr. T. Grier Miller, the Secretary-General is Mr. Edward R. Loveland, and the Treasurer is Mr. J. Malcolm Johnston. The other members of the Executive Committee are Dr. Frank N. Allan, Dr. Chester S. Keefer, Dr. William S. Middleton, Dr. Walter L. Palmer, Dr. Howard Rusk and Dr. Wallace M. Yater. Inquiries may be addressed to the Secretary-General at 4200 Pine Street, Philadelphia 4, Pa.

College of General Practitioners.

VICTORIA FACULTY.

The Aaron Cohen Prize Essay.

THE Victoria Faculty of the College of General Practitioners announces the following conditions for the Aaron Cohen Prize Essay:

The subject of the essay will be "How to Keep Healthy", or "Preventive Medicine for the Layman". There will be three awards—£100, £50 and £25, for first, second and third place respectively. The essay should be not more than 5000 words in length. Prize-winning essays, at the wish of the authors, are to be published in the lay Press and in pamphlet form, the anonymity of the author being pre-

served. The competition is open to any general practitioner in Australia.

Entries should preferably be typewritten, although this is not essential, and two copies must be submitted. Every entry must bear a *nom de plume* in the top right-hand corner of the first page, and under no circumstances must the entrant's name or address appear on any part of the manuscript. Every entry must be accompanied by a sealed envelope containing the entrant's name and address; this envelope must bear plainly on the outside the entrant's *nom de plume*. These envelopes will not be opened until after judging has been completed. Entries must be in the hands of the Secretary of the Victoria Faculty, The College of General Practitioners, 132 Grey Street, East Melbourne, by October 15, 1957. Entries must be the original work of the author, and must not have been previously submitted for publication. The prize-winning essays will become the sole property of the College of General Practitioners, Victoria Faculty, who will retain all rights of publication. Prize winners will be advised by post, and the results will be announced in THE MEDICAL JOURNAL OF AUSTRALIA and in *Annals of General Practice*.

Essays are to be written from the point of view that the subject matter is only for the layman, and technical terms, as far as possible, should be avoided and the whole subject presented in a popular manner based on sound medical principles. In all matters relating to awards, the decisions of the adjudicators are final.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Annual Subscription Course.

THE Post-Graduate Committee in Medicine in the University of Sydney announces that Professor Daniel G. Morton, M.D., Professor of Obstetrics and Gynaecology, University of California School of Medicine, and Director of

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED JULY 20, 1957.¹

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	2(1)	3(3)	3(1)	3(2)	1	..	..	..	12
Amoebiasis
Ancylostomiasis	2	..	13	..	..	..	..	..	15
Anthrax
Bilharziasis
Brucellosis	1(1)	1	..	..	..	..	..	2
Cholera
Chorea (St. Vitus)
Dengue
Diarrhoea (Infantile)	5	13(11)	2(2)	..	2(2)	..	..	1	21
Diphtheria	1	..	2(1)	..	..	..	3
Dysentery (Bacillary)	1(1)	..	..	..	..	..	..	1
Encephalitis	3(1)	..	..	..	..	..	..	3
Filariasis
Homologous Serum Jaundice
Hydatid	1	..	..	..	..	..	..	1
Infective Hepatitis	22(7)	26(9)	..	7(5)	..	2	..	..	64
Lead Poisoning	1	1(1)	..	..	..	2
Leprosy	4	..	..	..	4
Leptospirosis	1	..	..	..	..	..	1
Malaria	1(1)	..	..	..	..	..	1
Meningococcal Infection	3(1)	1(1)	..	..	..	1(1)	..	1	6
Ophthalmia
Ornithosis
Paratyphoid
Plague
Pollomyelitis	1	..	..	..	..	..	..	..	1
Puerperal Fever	1	..	..	..	..	..	..	1
Rubella	43(29)	..	24(7)	2(2)	..	..	..	69
Salmonella Infection
Scarlet Fever	15(9)	9(4)	2(1)	15(11)	3(2)	..	..	..	44
Smallpox
Tetanus	1(1)	..	1	..	13	..	1
Trachoma	14
Trichinosis
Tuberculosis	30(25)	12(10)	14(5)	3(2)	7(3)	4(2)	1	..	71
Typhoid Fever
Typhus (Flea-, Mite- and Tick-borne)
Typhus (Louse-borne)
Yellow Fever

¹ Figures in parentheses are those for the metropolitan area.

the American Board of Obstetrics and Gynaecology, will visit New South Wales from August 7 to 30. His programme will be as follows.

On Wednesday, August 14, at the Stawell Hall, 145 Macquarie Street, Sydney, at 8.15 p.m., Professor Morton will lecture on "Office Gynaecology". This is the Pfizer Post-Graduate Lecture, and the meeting is held in conjunction with the College of General Practitioners, New South Wales Faculty.

The following lectures will be given at hospitals:

Monday, August 12, 10.30 a.m., at St. Vincent's Hospital (Students' Lecture Theatre), "Hormone Therapy". Tuesday, August 13, 2 p.m., at the Royal North Shore Hospital of Sydney, "Diabetes and Pregnancy". (This lecture will be given during the Royal North Shore Hospital of Sydney Reunion Week, and will be open to members of the Annual Subscription Course.) Wednesday, August 14, 2.15 p.m., at Sydney Hospital, "Use of Hypotensive Agents in Pregnancy". Thursday, August 15, 8.15 p.m., at the St. George Hospital, Kogarah, "Breech Presentation and Delivery". Friday, August 16, 2 p.m., at the Royal Hospital for Women, "Hormone Therapy". Monday, August 19, 3.30 p.m., at the Women's Hospital, Crown Street, "Diagnosis of Uterine Cancer". (By arrangement with the New South Wales State Cancer Council, this lecture will be open to all members of the medical profession.) Tuesday, August 20, 1.15 p.m., at the King George V Memorial Hospital for Mothers and Babies, "Hormone Therapy". Thursday, August 22, 8 p.m., at the Royal Newcastle Hospital, "Breech Presentation and Delivery".

THE ROYAL INSTITUTE OF PUBLIC HEALTH AND HYGIENE.

Medical Post-Graduate Courses of Instruction for Doctors.

THE Royal Institute of Public Health and Hygiene conducts recognized courses of instruction annually (for post-graduate medical men and women only) for the examinations for the Diploma in Public Health and the Diploma in Industrial Health of the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England, and for the Diploma in Industrial Health examination of the Society of Apothecaries of London.

The next courses of instruction will commence on September 20, 1957. Further information, entry forms and prospectuses may be obtained from the Acting Dean at 23 Queen Square, London, W.C.1, or from the Acting Secretary of the Institute at 28 Portland Place, London, W.1.

Naval, Military and Air Force.

APPOINTMENTS.

THE following appointments, changes etc. have been promulgated in the *Commonwealth of Australia Gazette*, No. 36, of June 27, 1957.

NAVAL FORCES OF THE COMMONWEALTH.

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Reserve.

Promotion.—Surgeon Lieutenant Richard Peter Freeman is promoted to the rank of Surgeon Lieutenant-Commander, with seniority in rank of 31st August, 1956, dated 17th April, 1957.

AUSTRALIAN MILITARY FORCES.

Royal Australian Army Medical Corps.

The following officers are appointed as Honorary Colonels to the Royal Australian Army Medical Corps, 14th May, 1957: Honorary Brigadiers K. B. Fraser, C.B.E., E.D., Retired List (Northern Command), W. P. MacCallum, C.B.E., D.S.O., M.C., E.D., Retired List (Eastern Command), and D. M. Salter, E.D., Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Central Command), and Honorary Colonels L. E. Le Souer, O.B.E., E.D., Retired List (Western Command), and H. M. Fisher, O.B.E., E.D., Retired List (Tasmania Command).

Citizen Military Forces.

Eastern Command.

Royal Australian Army Medical Corps (Medical).—To be Captain (provisionally), 6th May, 1957: 2/191720 Sydney Malcolm Bell.

Western Command.

Royal Australian Army Medical Corps (Medical).—To be Captain (provisionally), 6th May, 1957: 5/26563 Frederick George Dally.

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Edwards, Lawrence Alfred, M.B., B.S., 1955 (Univ. Sydney), 26 Bullecourt Avenue, Mosman, New South Wales.

Deaths.

THE following deaths have been announced:

SHANASY.—Thomas Shanasy, on July 22, 1957, at Yarra Glen, Victoria.

BONA.—Percy Arthur Bona, on July 25, 1957, at Albert Park, Victoria.

HEWLETT.—Herbert Maunsell Hewlett, on July 28, 1957, at Melbourne.

Diary for the Month.

AUG. 13.—New South Wales Branch, B.M.A.: Executive and Finance Committee.

AUG. 19.—Victorian Branch, B.M.A.: Finance Subcommittee.

AUG. 20.—New South Wales Branch, B.M.A.: Medical Politics Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, 88 L'Estrange Terrace, Kelvin Grove, Brisbane, W.1): All applicants for Queensland State Government Insurance Office positions are advised to communicate with the Honorary Secretary of the Branch before accepting posts.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

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